CHAPTER-V
FINDINGS, SUGGESTIONS AND CONCLUSION

5.0 Introduction

This chapter provides the summary of findings. Further, it lists the suggestions to improve the Information and Communication Technology (ICT) Literacy among Professional College Librarians in Southern Karnataka and suggestions for further research and conclusion.

The academic libraries are the nerve centers of their institutions and must support teaching, research, and other academic programs. These play a pivotal role in teaching and learning environment of the information society. Regarding the information explosion, users’ new expectations in acquiring the needed information has made libraries and librarians to change rapidly. Today, developments in ICT have made it possible for the library staff to provide their users with a wide range of text, image and sound resources from around the world. One can see a positive trend in professional colleges towards adopting ICT in their libraries but to sustain and improvise it throughout requires very well equipped and competent library professionals. In this study, try to present a study done to investigate the Information and Communication Technology (ICT) Literacy among professional college librarians in Karnataka, especially in the South Karnataka region.

5.1 Summary of major findings

The Major findings of the study from Analysis Part-A and Analysis Part-B are given below.

5.1.1 Computer and other ICT related infrastructure in professional college libraries

- There are 53 servers, followed by 1321 desktops, 497 printers, 700 scanners, 81 photocopiers, 75 LCD projectors, 55 portable hard disk, 116 VCD players, 40 OHP, 145 FAX machine, 160 web cameras, 625 telephones, 112 televisions are available in professional college libraries under the study. The engineering college libraries have large number of ICT based equipment, compared to medical, education, law and college libraries. The
study also evident that, all the professional college libraries provides basic hardware facilities like desktop, servers, printers.

5.1.2 Availability of software in libraries

- Operating system and antivirus software gains the highest percentages i.e. 1321 operating system software and antivirus software, followed by 268 library management software, digital library software is less adopted with 68 libraries.

5.1.3 Use of operating system software in libraries

- The study reveals that 1246 (94.32%) libraries are using Windows, followed by 53 (4.01%) Linux, 22 (1.66%) libraries are using both Windows and Linux operating system software. The study depicts that 546 (91.91%) engineering college libraries, 210 (100%) education, 340 (94.44%) medical, 150 (95.54%) law college libraries are using ‘Windows’ operating system software. The study shows that ‘Windows operating system’ is the highly used operating system compared to others.

5.1.4 Use of antivirus software in the library

- About antivirus software, 750 (56.77%) libraries are using ‘Avast’ antivirus software, followed by 653 (49.43%) use ‘McAfee’, 596 (45.11) use ‘Norton Security’ and 557 (42.16) use ‘Kaspersky lab’ antivirus software. The study revealed that ‘Avast’ and ‘McAfee’ are the major antivirus software used in professional college libraries.

5.1.5 Access to Internet

- Almost 108 (100%) libraries of engineering colleges have Internet facility, followed by 50 (27.03%) education college libraries have the Internet and 135(72.97%) do not have Internet facility. About 55(72.36%) medical college libraries have Internet and 21 (38.18%) do not have Internet facility. About 30 (61.22%) law college libraries have the Internet facility and 19 (38.77%) do not have the Internet facility in their libraries.
5.1.6 Wi-Fi Facility

- It is found that 80 (74.07%) engineering colleges have Wi-Fi facility and 28 (25.93%) do not have Wi-Fi facility. 25 (13.51%) education college libraries have Wi-Fi facility and 160 (86.48%) do not have this facility. 48 (63.15%) medical college libraries have Wi-Fi facility and 28 (36.84%) do not have Wi-Fi facility. 25 (51.02%) law colleges libraries have Wi-Fi facility and 24 (48.97%) do not have Wi-Fi facility in their campus.

5.1.7 Separate server in the library

- A total of 38 (35.18%) engineering college libraries, 10 (13.15%) medical college libraries, 5 (10.20%) law college libraries have separate server in the library. No single education college library has a server in their libraries.

5.1.8 Institute website provides link to library website

- There are 186 (44.49%) professional colleges website that provide link to library website and 232 (55.50%) colleges have not provided link to library websites from institute website.

5.1.9 Library website constitutes

- The study reveals that 180 (96.77%) library website consists of library profile, followed by 120 (64.51%) library website consist of online databases, 114 (61.29%) online journals & books, 95 (51.07%) library website contain library news/events, 61 (32.79%) OPAC and 30 (16.12%) library website consist of institutional publications/ institutional repository.

5.1.10 Library automation

- A total of 67 (62.03%) libraries of engineering, 30 (16.21%) education, 25 (32.89%) medical, 24 (48.97%) law college libraries are automated. 41 (37.96%) engineering, 155 (83.78%) education, 51 (67.10%) medical and 25 (51.02%) law college libraries are not automated.
5.1.11 Status of library automation

- Almost 50 (74.62%) engineering college libraries are fully automated and 17 (25.37%) libraries are partially automated, followed by 8 (26.66%) educational college libraries are fully automated and 22 (73.33%) are partially automated, 15 (60%) medical college libraries are fully automated and 10 (40%) are partially automated. 18 (75%) law college libraries are fully automated and 6 (25%) are partially automated.

5.1.12 Use of library management software

- It is found that 56 (38.35%) of libraries are using ‘EASYLIB’ library management software, followed by 47 (32.19%) are using ‘KOHA’, 23 (15.75%) are using ‘LIBSOFT’, 12 (8.21%) are using ‘NEWZENLIB’, 1 (0.68%) library is using ‘LIBSYS’, 7 (4.79%) libraries are using other library software like ‘ALICE for WINDOWS’, ‘SLIM’.

5.1.13 OPAC facility in the library

- It is observed from the study that 50 (74.62%) engineering college libraries, 20 (66.66%) education, 20 (80%) medical and 20 (83.33%) law college libraries’ Library Management Software have OPAC facility and 17 (25.37%) engineering, 10 (33.33%) education, 5 (20%) medical, 4 (16.66%) law college libraries do not have OPAC facility in their Library Management Software.

5.1.14 Implementation of barcode technology in the library

- A total of 10 (14.92%) engineering college libraries have implemented barcode technology, 57 (85.07%) have not implemented barcode technology, 1 (4%) medical college library has implemented barcode technology and 24 (96%) medical college libraries have not implemented barcode technology. It can be observed from this study that none of the education and law college libraries have implemented barcode technology.

5.1.15 Implementation of RFID technology

- The study identified a total of 2 (2.98%) engineering college libraries have implemented RFID technology and 65 (97.01%) have not implemented a
RFID technology in their libraries. Not even a single library of education, medical and law college libraries have implemented RFID technology.

5.1.16 Functions Activated using RFID technology

- A total of 2(100%) engineering college libraries have activated the function of stock verification and circulation module, using RFID technology.

5.1.17 Institutional Repository

- There are 33 (30.55%) engineering college libraries that have created institutional repositories and 75 (69.44%) have not created institutional repositories, 10 (5.40%) education college libraries have institutional repositories and 175 (94.59%) do not have, 15 (19.73%) medical college libraries have institutional repositories and 61 (80.26%) do not have, 10 (20.40%) law college libraries have institutional repositories and 39 (79.59%) have not created institutional repositories.

5.1.18 Digital library software used for creating Institutional Repositories in the library

- The result of the study indicated that 63 (92.64%) libraries are using ‘DSpace’ digital library software, followed by 4(5.88%) libraries are using ‘E-Prints’, 1(1.47%) library is using ‘Techfocus’ for creation of digital libraries.

5.1.19 Reasons for Not Setting up Institutional Repositories

- The result of the study opined that 287 (82%) libraries provide the reason as lack of infrastructure for not setting up digital library in their colleges, followed by 233 (66.57%) libraries have no support by the management, 201 (57.42%) non availability of resources in digital format, 243 (69.42%) lack of skilled staff/skill to handle digital library, 53 (15.14%) libraries are not interested in setting up the digital library.

5.1.20 Separate computer wing in the library

- About 160(38%) libraries have separate computer library wing and 258 (62.00%) do not have separate computer library wing.
5.1.21 Library consortium membership

- The outcome of the study portraits that, 157 (37.55%) libraries holds consortium membership and 261 (62.44%) libraries do not holds membership in the library consortium.

5.1.22 Name of the consortium

- The study underlines the fact that 70 (44.58%) libraries are member for VTU-consortia, followed by 52 (33.12%) libraries are member of HELINET consortium, 30 (19.10%) DELNET consortium and 17 (10.82%) INDEST library consortia. The study shows that, 70 (87.5%) engineering college libraries have a membership of VTU-Consortia, followed by 52 (100%) medical college libraries have HELINET consortium membership.

5.1.23 ICT based services offered by the libraries

- About 242 (57.89%) libraries offer scanning of documents and forwarding service, followed by 228 (54.54%) libraries offer access to full text databases (e-books, e-journals), 205 (49.04%) CAS/SDI services/online reference service, 180 (43.06%) circulation of books in automated environment service, 135 (32.29%) e-mail alert Service, 110 (26.31%) OPAC, 52 (12.44%) blogs, and 7 (1.67%) libraries provide other services like off campus access, ready reference services, literature search service.

5.1.24 Financial assistance for ICT infrastructure

- A total of 228 (54.54%) libraries have financial assistance for ICT infrastructure and 190 (45.45%) do not have financial assistance for ICT infrastructure.

5.1.25 Adequacy of library budget

- There are 52 (65.00%) engineering college libraries that have adequacy of library budget, followed by 30 (46.87%) education, 37 (60.65%) medical, 15 (65.21%) law college librarians opine that they have adequacy of library budget. Whereas 28 (35%) of engineering, 34 (53.12%) education, 24 (39.34%) medical, 8 (34.78%) librarians opined that they do not have adequacy of library budget.
5.1.26 Extent of adequacy of library budget

- Almost 45 (35.58%) librarians opine that the budget allocated for the library is fully adequate with mean value of 11.25 and SD 3.86, followed by 42 (31.34%) opinion that budget is adequate with mean value of 10.50 and SD 6.35, 33 (24.62%) opinion that budget is moderately adequate with mean value of 8.25 and SD 6.39 and 14 (10.44%) opinion that budget is partially adequate with mean value of 3.5 and SD 1.29.

5.1.27 Organizing user orientation/ training programs for efficient use of ICT

- There are 314 (75.11%) libraries that organize user orientation and training programs and 104 (24.88%) do not organize user orientation and training program for efficient use of ICT.

5.1.28 Frequency of user orientation

- About 130 (41.40%) librarians opine that their library organizes user orientation and training programs yearly with mean value of 32.5 and SD 27.23, followed by 75 (23.88%) opined that library organizes user orientation and training programs half yearly with mean value of 18.75 and SD 8.53.

5.1.29 Factors influencing the provision of ICT based services in the library

- The result of the study depicted that 322 (77.03%) librarians opine that allocation of budget is the main factor influencing the provision of ICT based services in the library, followed by 246 (58.85%) ICT infrastructure, 215 (51.43%) ICT awareness of library users and 212 (50.71%) ICT training.

5.1.30 Future plans of the librarians towards ICT applications

- The result of the study indicated that 49 (11.72%) librarians have a future plan of their libraries own website, followed by 48 (11.48%) developing a web portal, 46 (11%) electronic/online e-resources (e-books, e-journals, e-databases), 42 (10.04%) barcode/RFID, 32 (7.65%) intranet and automatic check out and check in (KIOSK), 27 (6.45%) digital library/Institutional repositories, 23 (5.50%) web based administration & management of library operations.
PART-B: Opinion of Respondents

5.1.31 Distribution of the questionnaires

- There are 1022 questionnaires were distributed among professional college library professionals in Southern Karnataka, of which 914 filled-up questionnaires were received back consisting of 89.43 percent responses. The highest number of questionnaires have been received from engineering college library professionals (443; 89.13%), followed by education colleges library professionals (206; 93.21%), medical college library professionals (187; 85.38%) and law college library professionals (78; 91.76%).

5.1.32 Gender wise distribution

- The study revealed that 546 (59.73%) respondents are ‘Male’, 368 (40.26%) are ‘Female’. The study shows that 279 (62.97%) library professional of engineering colleges are ‘Male’ and 164 (37.02%) are ‘Female’, followed by education college library professionals with 122 (59.22%) ‘Male’ and 84 (40.77%) ‘Female’. In medical college library professionals 108 (57.75%) are ‘Male’ and 79 (42.24%) are ‘Female’. In law colleges, 37 (47.43%) are ‘Male’ and 41 (52.56%) are ‘Female’.

5.1.33 Age-wise distribution

- By studying the age wise distribution of respondents, it is found that 47 (05.14%) come under the age of ‘Below 25 years’, 163 (17.83%) belong to ‘26-30 years’, 168 (18.38%) come under ‘31-35 years’, 203 (22.21%) fall under ‘36-40 years’, 146 (15.97%) come under ‘41-45 years’, 115 (12.58%) belong to ‘46-50 years’, 45 (04.92%) of library professionals fall under ‘51-55 years’ of age-group. The remaining 27 (02.95%) of the sample represent ‘Above 55 years’ of age group.

5.1.34 Educational qualification wise distribution

- Regarding qualification, 425 (46.49%) library professionals are from ‘Arts’, followed by 258 (28.22%) library professionals are from ‘Commerce’, 223 (24.39%) library professionals are from ‘Science’ and 8 (0.89%) professional colleges library staff are from other disciplines like, Bachelor of Computer
Application, law. The study also depicts that in the discipline of engineering, education, law colleges, large number of library professionals are from the Arts background and only in the medical college large number of library professionals are from Science background.

5.1.35 Professional educational qualification wise distribution

- Regarding professional qualification, 27 (2.95%) library staff have the qualification of Ph.D., followed by 126 (13.78%) library staff have qualification of M.Phil., 591 (64.66%) library staff have professional qualification of M.L.I.Sc., 130 (14.22%) library staff have qualification of B.L.I.Sc., 40 (4.37%) library staff have qualification of other courses like Post Graduate Diploma in Library and Information Science, Diploma in Library and Information Science, and JOC Library Science.

- The study shows that in all the disciplines like engineering, education, law and medical, greater number of respondents has the qualification of M.L.I.Sc.

5.1.36 Designation wise distribution

- Among the respondents, 41 (04.48) are ‘Chief Librarians’, followed by 448 (49.01%) are ‘Librarians’, 321 (35.12%) are ‘Assistant Librarians’ and 104 (11.37%) are ‘Library Assistants’.

5.1.37 Awareness of operating systems

- All 914 (100%) library professionals are aware of ‘Windows operating system’, followed by 100 (10.94%) ‘Linux’, 60 (6.56%) of library professionals are aware of both ‘Windows’ and ‘Linux’ operating system software. The study also depicts that all the engineering, education, medical, law college library professionals are having great familiarity towards ‘Windows Operating System’ software.

5.1.38 Awareness and preferences of search engines

- All 914 (100%) library professionals are aware and prefer ‘Google’ search engine, followed by 826 (90.37%) ‘Yahoo’, 730 (79.86%) ‘Bing’, search
engine. The study also describes that ‘Google’ search engine is the highly aware and preferred by all library professionals.

5.1.39 Awareness and preference about Internet browser

- Among the respondents, 809 (88.51%) library professionals are aware and prefer ‘Google Chrome’ web browser for browsing web resources, followed by 802 (87.75%) ‘Internet Explorer’, 660 (72.21%) ‘Mozilla Firefox’, 109 (11.93%) ‘Opera’ and 55 (06.02%) library professionals are aware and prefer ‘Safari’. The study shows that a large number of the LIS professionals working in professional colleges are aware of the Internet browsers such as ‘Google Chrome’, ‘Internet Explorer’, and ‘Mozilla Firefox’.

5.1.40 Awareness about known library management software packages

- The study depicted that 718 (78.56%) library professionals are aware of ‘KOHA’ library Management Software, followed by 610(66.74%) ‘LIBSOFT’, 580 (63.46%) ‘EASYLIB’, 506 (55.36%) ‘NEWZENLIB’, 470 (51.42%) ‘LIBRARY MANAGER’, 150 (16.41%) ‘WINISIS’, 133 (14.55%) ‘OPENBIBLIO’, 98 (10.72%) ‘SOUL’ and 68 (07.44%) ‘LIBSYS’. The study shows that a large majority of the librarians are aware of the use of library management software, especially ‘KOHA’, ‘LIBSOFT’, and ‘NEWZENLIB’.

5.1.41 Awareness about digital library

- Out of 914 library professionals, 848 (92.77%) library professionals are aware of digital libraries and 66 (07.22%) are not aware of digital libraries.

5.1.42 Awareness about digital library software

- The study underlines the fact that 464 (54.72%) library professionals are aware of ‘Greenstone’ digital library software, followed by 289 (34.08%) are aware of ‘DSpace’, 192 (22.64%) are aware of ‘E-Prints’, 102 (12.02%) are aware of ‘Fedora’ digital library software. The study furnishes that except library professionals working in law colleges, a large majority of the library professionals aware of the use of digital library software. The library professionals working in engineering, education, medical college libraries have the knowledge of ‘Greenstone’ digital library software.
5.1.43 Awareness about networking technology

- There are 300 (67.72%) engineering college library professionals, followed by 50 (24.27%) education, 70 (37.43%) medical and 40 (51.28%) law college library professionals are aware of networking technology. 143 (32.27%) engineering, 156 (75.72%) education, 117 (62.56%) medical and 38 (48.71%) law college library professionals are not aware of networking technology.

5.1.44 Access to electronic databases for academic needs

- A total of 658 (71.99%) library professionals opined that they access electronic databases for academic needs and 256 (28.00%) library professionals do not access to electronic databases.

5.1.45 Awareness about ICT based library services

- The result of the study indicated that 740 (80.96%) library professionals are aware of scanning of documents and forwarding, followed by 721 (78.88%) are aware of access full text databases (e-books, e-journals, etc.), 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. The study clearly depicts that library professionals in education colleges has lack of awareness of ICT based library services. The library professionals of engineering, medical and law colleges possess knowledge of the ICT based services.

5.1.46 Nature of work in present designation

- It is observed from the study that 758 (82.93%) library professionals do acquisition work in the library, followed by 728 (79.65%) do technical processing, 589 (64.44%) circulation management, 579 (63.35%) do catalogue entry, 558 (61.05%) reference service, 549 (60.07%) online services, 546 (59.72%) CAS, 304 (33.26%) institutional repository, 235 (25.71%) serial control and 158 (17.29%) of database development. The study shows that, the nature of work of the LIS professionals are engaged. Most of the professionals attend to the traditional aspect of acquisition, processing,
maintenance, functions. However, considerable percentage of them are also extending online information services and current awareness services.

5.1.47 Level of awareness/ Skills towards technologies

- The result of the study depicted that 588(64.33%) library professionals are aware to excellent level in using smart phones, followed by 534(58.42%) library professionals are aware to an excellent level towards using Computers/ laptops, 471(51.53%) library professionals are aware to an excellent level towards Internet (leased line, Dial-Up, Broadband), external storage medium like memory stick, flash drive, pen drive and 388(42.45%) of library professionals shows a greater extent of awareness towards barcode scanner. The study shows that, level of skills possessed by the LIS professionals, the professionals possess excellent knowledge and skill in the area of using smart phones, computers, Internet browsing. However the professionals lack skill in handling some of the technologies such as, handling of LCD projectors, and scanners. The professionals need to train on these lines for extending effective services.

5.1.48 Level of awareness towards ICT based applications

- The study reveals that 511 (55.91%) library professionals are aware to high level towards application software, 386 (42.23%) are poor level of awareness of web page designing, 542 (59.30%) are poor level of awareness of creating metadata/tags, 256 (28.01%) are aware to high level with installation and customization of software, 241 (26.36%) are poor level of awareness of system administration & maintenance, 571 (62.47%) are poor level of awareness of programming languages like C, C++, Java.

5.1.49 Frequency of use of Web tools/ Services

- The result of the study depicted that 344 (37.64%) library professionals use Blogs, Twitters, Weblogs moderately, followed by 445 (48.69%) library professionals use Audio/video sharing/webcasting like Flicker, Skype, YouTube occasionally, 498 (54.49%) of library professionals rarely use discussion groups like Google/Yahoo! Groups, 445 (48.69%) of library professionals highly use list serves like LIS FORUM, NMLIS, MLOSC, 689
library professionals rarely use RSS Feeds, 661 (72.32%) library professionals rarely use LIS Wiki. The study shows that LIS professionals quiet frequently rely upon e-mail facility and LIS forum. They rarely depend upon social bookmarking and content management software. This study proves that not all web tools are used by the library professionals working in professional college libraries.

5.1.50 Require training programs on ICT

- A total of 655 (72.10%) library professionals opine that they require ICT based training programs and 259 (28.33%) library professionals opine they do not require ICT based training programs.

5.1.51 Areas of training needs of LIS professionals

- In the case of ICT training needs, 684 (89.16%) library professionals need training on digitization of documents institutional repositories, followed by 618 (94.35%) subscription and access to online journals/databases, 584 (1.20%) library management software, 543 (82.90%) Online public access catalogue and barcode, 497 (75.87%) Web 2.0, creation of website, Blogs, 474 (72.36%) on basic hardware and networking, and 299 (45.64%) Internet browsing and accessing web information resources.

5.1.52 Methods of acquiring ICT skills

- The study asserts that 689 (75.38%) library professionals obtain ICT skills through attending the training programs/ workshops, 618 (67.61%) library professionals get ICT skills through attending Lectures/ Seminar/ Conferences, 540 (59.08%) library professionals acquire ICT skills through searching internet for relevant information services, 390 (42.66%) library professionals get ICT skills through discussion with colleagues or friends, 238 (26.04%) through Online forum (Eg. LIS forum). The study shows that, among various means and methods of acquiring knowledge and skills, workshops and training programmes are treated as the effective method of acquiring skills in the field.
5.1.53 Attitude towards the application of ICT in the library

- The study remarked that 472 (51.64%) library professionals ‘Strongly agree’ with the statement that ICT applications are to improve the quality/efficiency of the library services, followed by 321 (35.12%) agree, 66 (07.22%) moderately agree, 12 (01.31%) disagree and 43 (04.70%) of library professionals gave ‘no opinion’.

- There are 797 (87.20%) library professionals who disagree with the statement that use of ICT often disturb the routine work of the library, 45 (4.92%) gave no opinion, 31 (3.39%) moderately satisfied, 27 (02.95%) strongly agree, 14 (1.53%) opine as agree.

- A total of 409 (44.75%) library professionals agree with the statement that ICT applications will help to increase and extend effective/quick library services, followed by 388 (42.45%) them strongly agree, 74 (08.10%) moderately agree, 19 (02.08%) disagree, 24 (02.63%) gave no opinion.

5.1.54 Constraints faced by library professionals to acquire ICT

- The study addressed the fact that, 516 (56.46%) library professionals have the opinion that they faced insufficient fund problem, followed by 369 (40.37%) face problem due to Inadequate ICT infrastructure, 331 (36.21%) Inadequate training in ICT applications, 312 (34.14%) lack of awareness among library professionals about the potentialities of ICT, 286 (31.29%) lack of ICT knowledge on the part of users, 246 (26.91%) lack of support from authorities for implementing ICT applications in library and 212 (23.19%) ICT operational cost is exceeding year by year.

5.1.55 Suggestions for updating the knowledge / Skills of the library professionals

- Regarding the suggestions for updating ICT skills, 577 (63.13%) library professionals suggest that there must be an in-house training programs for staff development, followed by 575 (62.91%) regular attendance of relevant conferences/workshops, 396 (43.33%) short term online courses, 365 (39.93%) attending professional association meetings, 332 (36.32%)
discussion of professional matters with colleagues, 138 (15.10%) undertaking individual research work/publication and 93 (10.18%) library professionals suggest that there must be involved in teaching related activities.

- The study emphasis on updating knowledge and skills, engineering college LIS professionals in large percentage prefer in house training; professionals of education and law colleges prefer to attend seminars and conferences; and the professionals of medical colleges prefer to attend workshops and training programmes in large percentage.

5.2. Verification of hypotheses

H1: There is correlation between adequacy of budget and the extension of ICT based library services.

H1 is accepted because the respondents from engineering colleges and medical colleges have expressed that there is sufficient budget allocation for implementation of ICT based library services. These institutions have improved to a considerable extent as the respondents in large percentage have expressed that there is ICT based services in their libraries.

Further respondents from education and law college libraries have indicated that, there is insufficient budget for ICT based services and as such as such they have opined the ICT based services are not implemented to the satisfactory extent. The $\chi^2$-test conducted for 3 d.f. at the 5% level of significance shows that there is no significant relationship between financial assistance for ICT Infrastructure and the respondents ($X^2= 12.00$ df=3, $P=0.213$) (Table 23 and 24).

H2: Awareness and knowledge of library management software among the library professionals of the four disciplines do not differ significantly.

H2 is rejected as the library professionals from engineering, education, law and medical colleges differ significantly regarding the awareness and knowledge of library management software. Among the respondents 307(69.3%) of library professionals, 176(85.44%) of education, 71(91.03%) of law college library professionals and 164(98.77%) of medical college library professionals have opined
that they possess knowledge/awareness of the library management software (Table 39).

**H3: There is significant difference among the LIS professionals of the four disciplines regarding the constraints encountered while acquiring ICT skills.**

**H3** is accepted as the professional colleges form all four disciplines i.e. engineering, education, medical, law colleges have indicated constraints in different degrees in acquiring ICT skills. The constraints expressed are with regard to funds for training, lack of support of colleges, lack of initiative from their professional organizations and associations. Regarding the support from the colleges, 64(14.45%) from the engineering colleges, 72(34.91%) from the education colleges, 76(40.64%) from medical colleges, 34(43.59%) from law colleges have indicated in respect of lack of support. The ANOVA test conducted for 39 d.f. at the 5% level of significance shows that there is a significant difference between the constraints of ICT applications and the respondents (F=7.36, P=0.000<0.05) (Table 53).

**H4: There is significant difference in adopting means and methods to acquire ICT skills by the LIS professionals**

**H4** is rejected as the library professionals not differ in adopting means and methods to acquire ICT skills. Among the professionals from the four disciplines, there is similarity adopting the methods of acquiring ICT skills. 315(71.11%) from engineering colleges, 16(77.66%) from education colleges, 154(63.10%) from medical colleges and 60(78.94%) from law college library professionals have adopted the method of attending workshops and training programmes. Further 283(63.88%) from engineering colleges, 130(63.10%) from education colleges, 147(78.60%) from medical colleges, 58(76.31%) from law college library professionals have attended seminars and conferences to acquire ICT skills. Therefore, these two methods have been found adopted by the professionals at large to acquire ICT skills. The χ2-test conducted for 30d.f. at the 5% level of significance shows that there is a non-significant relationship the methods to prefer to acquire ICT skills (X^2=30.000, df=25, P=0.224) (Table 51).
Verification of the Hypotheses

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<th>Hypotheses No.</th>
<th>Statement</th>
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<td>H1</td>
<td>There is correlation between adequacy of budget and the extension of ICT based library services.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2</td>
<td>Awareness and knowledge of library management software among the library professionals of the four disciplines do not differ significantly.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3</td>
<td>There is significant difference among the LIS professionals of the four disciplines regarding the constraints encountered while acquiring ICT skills.</td>
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<td>H4</td>
<td>There is significant difference in adopting means and methods to acquireing ICT skills by the LIS professionals</td>
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5.3 Recommendations and suggestions

In the light of the findings of the study, as well as respondents’ feedback, the following suggestions are made. These suggestions improve the Information and Communication Technology (ICT) Literacy among professional college librarians in Southern Karnataka.

1. The professional institutes need to develop the infrastructural facilities of their libraries so that the ICT literacy of library professionals can be best used.

2. Sufficient funds should be made available by the authorities for developments of ICT infrastructures, Digital resources development and application of ICT enabled services.

3. Professional college libraries should promote ICT awareness among library professionals.

4. Librarians have to attend academic programs so that they can improve their teaching skills. This will help in imparting instructions and train the library
users in availing the information services by using ICT tools and Web technologies.

5. Computerization of all the activities of the libraries should be made so as to cope with the new challenges.

6. Proper planning is a must to improve ICT competences among the information professionals of the professional college libraries.

7. The government may recruit new ICT professionals and even government can train existing professionals.

8. The LIS professionals must be recognized by the management/administration and confer with suitable awards and honours. The Professional associations may also work on these lines to recognize and motivate LIS professionals to render better ICT based services.

9. Library professionals should have enthusiasm to get train with recent trends in ICT.

10. The library authorities need to provide necessary scope and motivation to upgrade the ICT literacy of library professionals.

11. Management should send library professionals periodically to attend conferences and seminars, so as to keep themselves updated with recent technologies.

12. Associations like ILA, SALIS, IASLIC, IATLIS, KALA and others should periodically conduct symposium and workshop for librarians to keep them phase with latest technology.

13. The LIS schools of Karnataka need to change their curricula focusing more on ICT and changing library environment.

5.4 Suggestions for Further Research

The present study involved Information and Communication Technology (ICT) Literacy among professional college librarians in Southern Karnataka. Based on the present study, the following areas are identified for further research.
1. The study on Information and Communication Technology (ICT) Literacy among other colleges and universities librarians in and outside Karnataka can be conducted.

2. The study can be conducted for public and special libraries in and outside Karnataka.

3. A comparative study could be done on professional and non-professional college librarians in and outside Karnataka.

4. A study on the Information and Communication Technology Literacy among faculty and students in Karnataka can be conducted.

5. The study on ICT Literacy training provided by the various institutions for library professions for the improvement of their skills.

5.5 Conclusion

This study provided insight into the Information and Communication Technology (ICT) Literacy among professional college librarians in Southern Karnataka. ICT literacy among the professional college librarians is a necessity nowadays. However, it is more so in the professional college environment. Especially in medical and engineering colleges, the ICT literacy of the librarians is expected at the higher level because most of the colleges offer themselves for quality assessment at the national level such as NBA and NAAC accreditation. On account of up-to-date and quality services, the colleges have to procure and extend technology based digital information services. It is really encouraging to note that the professional college library staff of late acquire the higher qualification and the necessary knowledge and skill to handle the ICT based facilities and services in the libraries.

Quite a number of professional organizations and associations have also organized workshops, seminars and conferences in order to bring the latest developments to the attention of the professional librarians. Sufficiently the librarians have also been deputed to undergo the training in the area of ICT. However the same has to be provided to the professional staff working in law and education colleges. Not many organizations and professional associations are there in the field of law and education. There is need to improve the ICT facilities in these law and education
libraries and also extend the ICT knowledge and skills. The present study helps to know the current ICT literacy level among library professionals in professional colleges. It seeks to determine how professional college libraries are coping up with the information explosion with the help of ICT. The study will be useful to the librarians and its managers to identify their level of literacy by knowing the current scenario of professional colleges.