CHAPTER 5

MAJOR FINDINGS, SUGGESTIONS AND CONCLUSION

The final chapter comprises the empirical study which provides a summary of the earlier sections, highlighting key information from the interviews conducted, and implication of the study findings, conclusion and future scope for further research.

5.1 SUMMARY

There has been a tremendous advancement in the use of digital libraries, and consumers have benefited from the growth and ease of services, such as the ability to conduct online browsing and research from the comfort of their homes. Patrons have recently grown accustomed to the increase in digital library services and the ease at which they can access global information that was once extremely difficult to retrieve from traditional physical libraries. For example, although the use of e-books initially had a slow start, their use has increased in libraries and will continue to grow due to a broadening variety of access formats and available functions, such as full-text searches.

5.2 MAJOR FINDINGS OF THE STUDY

The major findings of the study are summarized in this sub-section of the study.

5.2.1 Demographic Status of the Librarians

- From the elaborate data discussion, it has been concluded that a majority of almost 60.00 percent of sample subjects work in Deemed Universities and 65 percent of librarians are Ph. D. scholars. (Tables 4.1 and 4.2)
• Similarly 77.50 percent of respondents hold a PGDCA degree and 80 percent of the respondents have 10 years of work experience or more than that. (Tables 4.3 and 4.4)

5.2.2 Facilities Available in the University Libraries

• From the empirical data analysis, it has been found that 35 percent of respondents have mentioned that ventilation facilities are properly maintained in their college libraries and 72.50 percent of respondents have opined that their universities have adopted both natural and artificial lighting facilities. (Tables 4.6 and 4.7)

• It has been inferred that 72.50 percent of librarians have said that fire extinguishers are fixed in the libraries to prevent fire accidents. (Table 4.8)

• A majority of 90 percent of librarians have agreed that their libraries are automated with library management software and 35 percent of the sample subjects have installed In-House software in their libraries. (Tables 4.9 and 4.10)

• From the detailed data discussion, it has been found that almost 100 percent (mean score of 3.00) of sample subjects have said that they have erected automated circulation system in their libraries. (Table 4.11)

• It has been inferred that 87.50 percent of libraries have internet facility for easy accessibility and 27.50 percent of librarians have said that they have connected 20-30 nodes towards internet facility. (Tables 4.12 and 4.13)
5.2.3 Manual and Digital Preservation Techniques Practised in University Libraries

- From the empirical data analysis, it has been found that a majority of almost 75.89 percent (mean score of 6.83) of respondents have stated that the library books are properly glued and restored at frequent intervals. (Table 4.14)

- It has been clearly identified that a majority i.e., 87.50 percent (mean score of 12.25) of libraries have back up facilities to save and retrieve the lost data (Table 4.15)

- It has been found that about 72.50 percent of libraries have installed Symantec Antivirus software to avoid virus threats. (Table 4.16)

- Similarly, 82.14 percent (mean score of 5.75) of respondents have installed Antivirus software to protect computers from virus threats among which 50 percent of the libraries have installed Green Stone digital library software. (Tables 4.17 and 4.18)

- From the detailed data discussion, it has been found that 75 percent of the respondents have adopted long-term preservation techniques to preserve the database and 72.50 percent of sample subjects have mentioned that they replicate original copies to preserve the content. (Tables 4.20 and 4.21)

- An absolute majority of almost 55 percent of the respondents agree that their universities have C.C.T.V cameras to monitor the functioning and 20 percent of respondents have affirmed that their universities have 11-15 C.C.T.V cameras. (Tables 4.22 and 4.23)
• It has been found that 67.50 percent of respondents have agreed that their institutions have allocated separate funds towards preservation of the library and 57.50 percent of respondents have stated that their institutions have allocated Rs.10000-Rs. 50000 for preservation. (Tables 4.24 and 4.25)

• A vast majority i.e., 87.50 percent of respondents have opined that the institutions provide financial assistance for library maintenance. (Table 4.26)

5.2.4 Adoption of Bar-Code Technology in Libraries

• From the elaborate data analysis, it has been clearly inferred that 90 percent of the libraries have adopted bar-code technology in their libraries and 61.11 percent of respondents have said that they use stand type bar-code reader for scanning. (Tables 4.27 and 4.28)

• An absolute majority of 72.22 percent of the respondents have opined that they use bar-code readers for issue/ return purposes and 86.11 percent of the institutions have customized bar-code ID cards in their libraries. (Tables 4.30 and 4.31)

• Similarly, a majority of 94.44 percent of the institutions use in–house printing bar-code labels and 77.78 percent of respondents have stated that they have adopted USB bar-code scanner to their computers. (Tables 4.32 and 4.33)

• From the detailed data analysis, it has been inferred that a majority of 99 percent (mean score of 2.97) of sample subjects have opined that they mainly use bar-code readers to scan books while issuing it to the visitors and also to scan other materials that are used in libraries. (Table 4.34)
5.2.5 Adoption of Radio Frequency Identification Technology

- From the empirical data analysis, it has been found that 67.50 percent of the sample subjects have said that they do not have RFID system in their libraries and 53.85 percent of sample subjects use high frequency RFID systems in the libraries. (Tables 4.35 and 4.36)

- The presented data analysis infers that 46.15 percent of respondents have stated that their institutions have RFID systems to the entire librarians’ workstations, 61.54 percent of sample subjects believe that adoption of RFID system gives internal security and 61.50 percent of respondents have implemented checking system as a part of RFID. (Tables 4.37 and 4.39)

5.2.6 Librarians’ Perception towards Benefits of Information Security Systems

- From the elaborate data discussion, it has been observed that 99.33 percent (mean score of 2.98) of librarians believe that the security systems maintained in libraries help them to protect the software packages installed in computers. (Table 4.40)

- A vast majority of almost 97.33 percent (mean score of 2.92) of respondents have stated that the barcode scanners enable fast transactions and 92.33 percent (mean score of 2.77) of respondents feel that the RFID system is one of the easiest technologies to be adopted in libraries. (Tables 4.41 and 4.42)
5.2.7 Librarians’ Perception towards Hindrance Faced in Implementation of Effective Information Security Systems

- From the data analysis, it has been observed that almost 97.50 percent of libraries do not have problems with data security (Table 4.43).

- It has been observed that 45 percent of respondents opine that books and other information materials get physically deteriorated within a short period of time. (Table 4.44)

- It has been inferred that 30 percent of the sample subjects believe that the economic status of the users is the main cause for damages, as the institutions spend money (for preservation) only on the basis of their economic status. (Table 4.45)

- Similarly 67.22 percent (mean score of 6.05) of librarians complain that the libraries lack proper planning towards preservation and 64.86 percent (mean score of 4.54) of respondents opine that the librarians are not proficient in RFID and that they were unable to use it effectively. (Tables 4.46 and 4.47)

- An absolute majority of 65 percent (mean score of 3.25) of sample libraries lack in standards. (Table 4.48)

5.2.8 Physical Security

- From the empirical data analysis, it has been observed that 98.33 percent (mean score of 2.95) of respondents have stated that their universities have security guards and fire protection equipment to prevent accidents. (Table 4.49)
A vast majority of 83 percent (mean score of 4.98) of libraries have employed security guards to monitor the visitors and 83.33 percent (mean score of 5.00) of libraries have fixed protecting materials at the exit. (Tables 4.50 and 4.51)

5.2.9 Digital Security

- It has been clearly found that 88.25 percent (mean score of 3.53) of libraries have LAN connection and a majority i.e., 85.60 percent (mean score of 4.28) of librarians have opined that they have a unique password ID for the computers. (Tables 4.52 and 4.53)

- An absolute majority of 79 percent (mean score of 5.53) of libraries provide separate password for individuals and 75.83 percent (mean score of 4.55) of sample libraries use only local area network to avoid virus threats. (Tables 4.54 and 4.55)

- From the detailed data discussion, a majority of almost 78.83 percent (mean score of 4.73) of libraries have installed Anti- spyware security to protect computer programs and 77 percent (mean score of 3.85) of libraries have library server operating systems to safeguard hardware devices. (Tables 4.56 and 4.57)

5.2.10 Collection Security

- From the elaborate data analysis, it has been clearly identified that a majority of 77.50 percent (mean score of 4.65) of sample libraries have CCTV facility to monitor the visitors. (Table 4.58)
5.2.11 Level of Satisfaction

- It has been found that only 38 percent of the librarians exhibit high degree of satisfaction towards the facilities offered in the library. (Table 4.59)

5.2.12 Results of Hypotheses Testing

- The results of independent ‘z’ test reveal that there exists uniformity in the library facilities available in State and Deemed Universities in Tamil Nadu. (Table 4.60)

- From the statistical results of ANOVA test, it has been found that there exists no association between nature of damages incurred by the libraries and the manual information protection systems adopted by them. (Table 4.61)

- The results of ANOVA test infer that the challenges faced by the librarians in management of digital preservation system does not hide their digital and electronic data preservation practices. (Table 4.65)

- The results of ANOVA test reveal that the frequency of RFID systems available in the libraries does not affect the barriers faced by the librarians in the usage of RFID systems. (Table 4.69)

- From the empirical results of rotation factor analysis, it has been found that State and Deemed Universities operation in Tamil Nadu have significantly benefitted from the adoption of information systems in the libraries. (Tables 4.71 and 4.72)

- The results of multiple regression analysis show that there exists close association between level of benefits and satisfaction derived by the librarians in the implementation of information security systems. (Tables 4.74 and 4.75)
5.3 SUGGESTIONS

Data collected for this study revealed that 70–80 percent of the sample University Libraries have effective implementation of digital and computerized library management. On the contrary, it has been found that 62 percent of librarians remain unsatisfied with the nature of digital, computerized and information technology tools managed in their libraries. Based on these findings, the following suggestions are proposed.

- Library administrators require unique security concerns when compared with other industries. Thus, the libraries must have effective RFID identifier:
  - For securing book access by the readers.
  - For the reduction of theft of books
  - For efficient tracking of materials throughout the library and for faster stock-verifications.
  - RFID system also supports in Tags/Labeling of books, journals and materials, in fixing of security gate, for efficient functioning of self-service units and also for self-management by the library staff.
  - RFID also provides a solution towards security of library materials, as its effective implementation and management support the library staff in foolproof security, access control and proper books, journals, compact disk, electronic materials holding and management.

- Fire, water, theft, vandalism, mutilation of books and biological infections such as insects, mold, yellowing, foxing, fungi, acidity and brittleness are the common hazards in University Libraries. The climatic conditions such as high temperature and humidity cause
damages to the collection at a higher rate. These could be minimized to a certain amount by interior arrangements, the building construction and by effective application of modern pesticide control techniques.

- It is suggested to both State and Deemed University Libraries operating in Tamil Nadu to install CCTV cameras in addition to RFID Gates during rush hours, which may help in surveillance.

- Security systems (Passwords) should be provided to library staff, students and general public who use computers in the libraries and website or e-library facilities in order to avoid unwanted entry of persons into the library who may damage books and digital equipment or stealing of library books or materials or digital equipment.

- The empirical study leads to the suggestion that there is an urgent need in employing of a system librarian/analyst who will take charge of overseeing system administration, make daily and routine maintenance of computer sets that are connected to the servers and also in effective network management.

- The information personnel (system librarian/analyst) are also suggested to enrich their professional competence and leadership qualities which would facilitate meaningful identification, location and evaluation of information resources in order to promote professional excellence among the user community. They should aim at providing easy access to the right information in a service-rich environment to all its users.

- Further, it is suggested that implementation of full scale library automation and Internet services to cover the entire university, would raise the intellectual development of staff and students and thus the institutional image in the academic world will be enhanced.
Further, installation of emergency alarms is also suggested to the State and Deemed Universities. Emergency alarms and emergency lamps should be installed in case of emergency. Because these equipments are considered as the basic facilities available in modern libraries in security arrangements.

Similarly, from the empirical study it has been found that the Librarians have to be provided with a fair amount of control of heat, temperature and humidity, air ventilation, shelving of books and non-book materials and pollution free stack area. The library staff and the library management authorities are suggested to improve library ventilation and humidity condition through effective implementation of centralized air-conditioners.

It is also suggested that the library staff should learn how to operate fire equipment and how to use emergency escape in case of sudden fire throughout the building. Similarly, internal arrangements must be organized against fire spreading both vertically and horizontally.

5.4 CONCLUSION

The present investigation entitled, “Information Security Systems in University Libraries of Tamil Nadu: an Analytical Study” has carried out the survey in forty University Libraries of Tamil Nadu. The present investigation has achieved its aim by providing a useful review of the state-of-the-art implementation of ISS in University libraries in Tamil Nadu. The major findings of the study are the following:

Libraries are an institutional set up to cater to the educational, cultural, research recreational and informational needs of their users. Libraries have the main objectives of being entrusted with the selection, acquisition, organization,
storage and dissemination of information to their patrons. Information security application in library management is not simply computer security whereas computer security relates to securing computing systems against unwanted access and use; information security also includes issues such as information management, information privacy and data integrity. For example, information security in a library would include personnel security and policies, steps taken for effective backups, and the physical integrity of computing facilities.

In conclusion, it may be stated that the implantations of information security systems are not adequate. Ongoing maintenance is required in order to avoid inevitable decay due to interaction with the environment. To be diligent about the security of information systems, personnel with specific security-related job descriptions are a necessity for effective library management.

5.5 SCOPE FOR FUTURE RESEARCH

The Current study focused on the State and Deemed Universities functioning in Tamil Nadu and it has not included either Central or Private University Libraries. Thus, it is suggested to the future researcher to include the information security in Central and Private University Libraries that function in Tamil Nadu.