Chapter 5: FINDINGS, CONCLUSION AND SUGGESTIONS

Outsourcing has tremendous potential for various library activities and services. It has become an integral part of all types of the libraries. Librarians have been using outsourcing as a viable way to accomplish many and varied tasks. In an environment of freezing/shrinking budgets and an increasing demand for more information by library users, many libraries outsource some of their services and functions to an outside vendor. This is also regarded as a solution to financial and staffing problems or sharing of our responsibilities and risks with vendors. Outsourcing has become a strategic tool in library management.

Outsourcing became a hot topic in libraries worldover during the 90’s because libraries worldover almost completed their automation work at that time and started to find out the various ways to provide more efficient and effective services to their users. So, they started the use of outsourcing. However, the Indian libraries started the automation work very late as compared to libraries worldover and currently Indian libraries are at the stage of reengineering and restructuring their activities and services. So, now they are taking the help of the outsourcing to improve the quality and quantity of the services.

The present study, therefore, explores discussion the numerous reasons for using outsourcing, areas of implementation, types as well as effects of outsourcing on library activities and services in Science and Technology libraries of Northern India. Apart from this, the study also highlights the model of the possible phases of the outsourcing life cycle in libraries, current and future trends of outsourcing in libraries. Under this study 34 S & T libraries including Medical sciences, General sciences, Engineering sciences, Defence sciences and Medical sciences were surveyed to assess the impact of outsourcing on library activities and services.
The data has been analysed using both descriptive and inferential statistical techniques including frequencies, percentage, averages, standard deviation, chi-square etc. The results and trends revealed by the analysis of the data in the forth chapter is showing brief summary of findings, conclusions, suggestions and future research areas etc. are presented in this chapter.

5.1 DISCUSSION AND FINDINGS OF THE STUDY
The major findings of the study are as follows:

1. Only 23.5% of the studied institutes are having website of both institution as well as their libraries. 76.5% institutes are having only institution’s website and there is a no website for library (Table 4.1). However, the major reason for not having the separate website for libraries is ‘lack of trained and skilled IT professionals’ in libraries.

2. 79.4% libraries are headed by the professionally qualified librarians and 20.6% libraries do not have professionally qualified librarians as their heads. 23.33% of government funded libraries are run by non-library professionals, which show the casual approach of government in the appointment of the qualified librarians. (Table 4.2)

3. Haryana is having maximum number i.e. 66.67% of highly qualified librarians’ with M.Phil and Ph.D. degrees, followed by Delhi with 23.52%. However, none of the librarians in Chandigarh is highly qualified (Table 4.4).

4. Learning resources consist both print as well as non-print sources (Table 4.7-4.19). the study has made it clear that majority of the selected libraries have lesser number of print and non-print materials (except some big libraries like IIT, NIT etc.), which could be attributed due to more stress on quality and specialized collection rather than quantity.

5. The condition of the e-books and ETDs are also far below the normal expectations from S & T Libraries.
6. As far as subscription of the print and e-journals is concerned only 20.6% libraries subscribe print journal 401 & above. However, 44.12% libraries are subscribing e-journals up to 500.

7. 84.29% libraries are participating in consortia. 93.33% govt. funded libraries and 25% non-govt. funded libraries are participating in the e-resources consortium. It means that funding agency plays significant role in participation of consortium (Table 4.17).

8. Majority of the libraries are participating in consortium (Table 4.18).

9. Only 23.5% libraries are preparing portals for the users’ convenience. This facility is provided to their users by only those libraries which are having a separate library website. 100% Universities and 50% Deemed Universities are providing this innovative and fruitful service to users’ (Table 4.19).

10. Delhi is raked top in hardware status followed by Haryana. Universities and Research Institutes possess more hardware as compared to Deemed Universities and Institutes of National Repute. Govt. funded libraries are more affluent in hardware. May be due to the paucity of funds non-govt. funded libraries are not able to afford sufficient ICT infrastructure (Table 4.20 and 4.21).

11. The practice of using old versions of operating system and general application software could be attributed either to the paucity of funds or due to the reluctance to change or unawareness of the development in this field (Table 4.22 and 4.23).

12. 91.74% libraries are using readymade library application software (Table 4.24) and LIBSYS is the most popular library application software used by 78.78% libraries (Table 4.25). The reasons for more popularity of the readymade software could be due to the features like their more efficient functioning, regular updation, maintenance facility and technical support etc.

13. LAN is established and maintained by outside (outsourced) agency in 62.5% and 50% libraries respectively (Table 4.26). Chandigarh is ranked top in LAN establishment and maintenance by outsourced agency, it is
either due to lack of sufficient IT professionals or ICT infrastructure or lack of funds. However, govt. funded libraries are having enough funds, may be that is why their LAN establishment and maintenance is generally done by the outsourced agency (Table 4.27).

14. 64.7% libraries are having the membership of various library networks (Table 4.28). DELNET is the most popular network among Science and Technology libraries, which is evident due to the fact that because 86.7% libraries are having the membership of DELNET (Table 4.29).

15. 53% libraries are having library professional staff permanent in-house and only 6% libraries are fully managed by the outsourced library professionals. However, 41% libraries are having partially outsourced library professional staff. State wise libraries situated in Delhi, Institute wise Deemed University libraries and funding source wise Govt. funded libraries are ahead in taking the advantage of outsourced professionals. It also shows that government is least interested in appointing the permanent library professional staff. (Table 4.30)

16. As regards IT professional staff only 9% libraries are having the permanent in-house, followed by 15% libraries have fully outsourced staff IT professional staff and 3% are having partially outsourced IT professional staff. However, 73% of the libraries are having IT professional staff neither in house nor outsourced. State wise libraries situated in Delhi, Institute wise Universities libraries and funding source wise Govt. funded libraries are ahead in having fully outsourced IT professional staff (Table 4.31).

17. 26% libraries are having Non-Professional staff in-house, followed by 53% libraries having fully outsourced and 21% libraries having partially outsourced Non-Professional staff. State wise libraries situated in Delhi, Institute wise Institutes of National Repute libraries and funding source wise Govt. funded libraries are ahead in having fully outsourced Non-professional library staff (Table 4.32).

18. Opinion about the usefulness of outsourcing for library activities and services by (Table 4.33- 4.34).
19. Selective outsourcing is implemented by maximum i.e. 91% libraries (Table 4.35).

20. Most of the libraries have been using outsourcing since many years. Therefore, it can be concluded that it is not a new phenomenon for Indian libraries too (Table 4.36).

21. 85% libraries carefully evaluated the need of the outsourcing before the implementation of outsourcing (Table 4.37).

22. 56% libraries select the vendor for outsourcing project by Requesting for Proposals followed by Bid process/ Tender Basis, followed by 35% libraries which select the vendor on the basis of vendor’s market reputation (Table 4.38).

23. 73.47% libraries have mentioned ‘due to lack of required staff’ as the top reason for opting to the use outsourcing and that it allows libraries ‘to concentrate on core activities’ reasoned by 73.52% libraries (Table 4.39).

24. Among the reasons of not using outsourcing 23.52% libraries have mentioned that ‘outsourcing is suitable only for technical services’ as the top reason and 20.58% libraries have ranked ‘fear to reduce the quality of services’ as the 2nd reason (Table 4.40).

25. Top rated Professional-Automated Activities and Services (Table 4.41):

   a) **IN-HOUSE**: Stock Verification (67.64%), Database Updation (61.76%) and Database Maintenance (58.82%)

   b) **FULLY OUTSOURCED**: Software Development (88.24%), Retrospective Conversion (44.12%), Network Creation (44.12%), Network Maintenance (44.12%) and Hardware Maintenance (38.24%).

   c) **PARTIALLY OUTSOURCED**: Library Automation (35.29%), Barcode Labeling and Pasting (20.59%) and Hardware Maintenance (20.59%).
26. There is a minor difference between the uses of outsourcing practice for Library Automation work in selected states. Deemed Universities are on the top for using outsourcing of Library Automation work, followed by libraries of Institutes of National Repute and Research Institutes. However, none of the University libraries uses outsourcing for Library Automation. Libraries of Non-govt. funded institutes are ahead in using outsourcing of Library Automation work as compared to govt. funded institutes (Table 4.51).

27. Majority of the libraries use full outsourcing of Software Development work in selected states. However, only 10% libraries in Delhi performed this activity in-house. 100% libraries of the University, Deemed University and Institutes of National Repute use outsourcing for Software Development work, only 12.5% libraries of Research Institutes performed Software Development work in house. 100% libraries of the non-govt. funded and 93.3 % libraries of govt. funded institutes use outsourcing for Software Development work (Table 4.52).

28. There is a significant difference between the uses of outsourcing practice for digitization work in selected states. Majority of the libraries in Delhi i.e. 70% use outsourcing for digitization work, followed by the 33.3% libraries of Haryana. However, none of the library in Chandigarh interested in digitization work. Institute wise university libraries are taking the initiative of digitization work, followed by Research Institute libraries, Deemed University and Institute of National Repute. Funding source wise government funded libraries are more interested in digitization work (Table 4.53).

29. Libraries situated in Haryana are ahead in performing the Hardware Maintenance work in house as well as in using outsourcing for the same. University libraries are on the top in performing Hardware Maintenance work in-house. Institutes of National Repute use outsourcing for Hardware
Maintenance work. Funding source wise maximum libraries of the government funded institutes are using outsourcing for Hardware Maintenance work as compared to non-government funded institutes (Table 4.54).

30. Libraries situated in Haryana are ahead in Assigning Subject Headings work in house as well as in using outsourcing for the same. University libraries are on the top in Assigning Subject Headings work in-house. However, Institutes of National Repute are on top for using outsourcing in Assigning Subject Headings work. Funding source wise maximum libraries of the non-government funded institutes are using outsourcing for Assigning Subject Headings as compared to government funded institutes (Table 4.55).

31. Libraries situated in Delhi are ahead in performing Electronic Document Supply work in house. University libraries are on top in performing Electronic Document Supply work in-house. Funding source wise maximum libraries of the government funded institutes perform Electronic Document Supply work in-house (Table 4.56).

32. Majority of the libraries prefer to perform Professional-Manual Activities and Services In-house. However, 5.88% libraries have fully outsourced their Stock Verification and Staff Development each, followed by 2.94% libraries ICT Training. 26.47% and 23.33% libraries partially outsourced their ICT Training and Staff Development respectively, followed Cataloguing work by 5.88% libraries (Table 4.57).

33. Libraries situated in Delhi are ahead in performed Staff Development work in house. University libraries are on top in performing Staff Development work in-house. Funding source wise maximum libraries of the government funded institutes perform Staff Development work in-house (Table 4.58).

34. Top rated Non-Professional Activities and Services (Table 4.59)

   a) **IN-HOUSE**: Photocopying (58.8%), Building Maintenance (50%) and Electricity Maintenance (41.18%)
b) **FULLY OUTSOURCED**: Binding (67.64%), Security (50%) and Cleaning & Dusting (50%).

c) **PARTIALLY OUTSOURCED**: Labeling & Pasting (29.41%), Water Supply Maintenance (26.47%) and Electricity Maintenance (23.53%).

35. Libraries situated in Haryana are ahead in performing Security work in-house. University libraries are on top in performing Security work in-house. Funding source wise maximum libraries of the government funded institutes perform Security work in-house (Table 4.69)

36. Normally outsourcing is considered to be anti-staff and anti-professional. However, 55.88% of the staff is ‘supportive to outsourcing’, whereas 35.29% felt the outsourcing has ‘reduced their workload’ and ‘Improvement in their skills’ each. It is surprising that fear of losing job got last rank and none has fear to lose the identity (Table 4.70).

37. Users reaction as per testified by the librarian indicated that 73.52% of the users’ reported that outsourcing has improved the quality of library services, 47.05% of the users’ felt that it enhanced the users’ satisfaction (Table 4.71).

38. 64.71% libraries evaluate the success of the outsourced activities and services (Table 4.72).

39. 61.76% libraries found that outsourcing work improves the quality of the library services (Table 4.73).

40. Maximum libraries i.e. 88.23% are satisfied and are getting the desired results from outsourcing (Table 4.74).

41. **29.41% libraries rated that the extent of satisfaction with outsourcing are excellent. 38.24% libraries rate the results are good, followed by 20.59% libraries reports show that the results are satisfactory (Table 4.75).**

42. **76.47% libraries are interested to continue outsourcing and 70.59% libraries favoured to expand the areas of activities of outsourcing in future (Table 4.76).**

43. **76.47% libraries want to continue outsourcing in future too. Maximum libraries want to expand the use of outsourcing for Professional-Automated**
and Non-Professional activities and services, however, none of the surveyed libraries desired to expand outsourcing in the Professional-Traditional activities (Table 4.77).

44. Maximum libraries want to expand the use of outsourcing for Professional-Automated viz. Digitization (58.82%) and RFID Tagging and Maintenance (32.35%) and in Non-Professional Activities and Services viz. Binding and Reprography (14.70%) (Table 4.78).

45. After seeing the results of non-outsourcing activities and services, 61.76% libraries are tempted to go for outsourcing Professional-Automated activities and services in future. Only 8.82%, libraries do not want to use outsourcing for Professional activities and services (Table 4.79).

46. Maximum libraries prefer to use outsourcing to cope up with the problem of staff shortage (88.23%). Librarians prefer using outsourcing because it is more useful (85.29%), time saving (82.35%) as well as improves the staff skills and attitude (82.35%). 79.41% librarians also feel that outsourcing increases the quality and quantity of the libraries’ products services. 76.47% librarians prefer outsourcing because it is convenient for adopting new technology and enhances the standardization in library (Table 4.80).

47. 100% library staff prefers to use outsourcing because it helps in adopting the new technologies easily. 94.73% staff considers that outsourcing is time saving as well as more useful. 92.10% prefer to use outsourcing because it increases the quantity of product & services (Table 4.81).

48. Maximum library staff prefer to use outsourcing because it ‘Helps Staff to concentrate on core activities and services’ with mean score 4.36, ‘Helps library to provide better services’ with mean score 4.32. Generally professionals consider outsourcing as anti-professional but it is surprising that the reason ‘Is outsourcing a professional threat’ got last rank with mean score of 2.42 (Table 4.82).

### 5.2 Testing of Hypotheses and Inferences
In order to ensure a scientific and systematic progress of the present study, nine major hypotheses formulated at the initial stage of the research (as depicted in Chapter 3 at page nos. 5-6) are tested with the furnished data in order to determine the validity and relevance of the proposition that guided the entire research. On testing of the hypotheses, the following results are obtained:

**HYPOTHESIS-1:** The hypothesis that ‘*It has become a common practice to outsource library activities and services*’ has come true, as 67% libraries are using outsourcing since more than 5 years (Table 4.36).

**HYPOTHESIS-2:** The hypothesis that ‘*There is a significant difference between the outsourcing practices in the libraries of science and technology institutes*’ has been partially true because there is no difference found between the outsourcing practices adopted by various S & T Institutes. All S & T Institutes are implementing only selective outsourcing (Table 4.35). However, significance difference is found in few library activities and service viz. Library Automation, Software Development and Staff Development (Table 4.51, Table 4.52 and Table 4.58).

**HYPOTHESIS-3:** The hypothesis that ‘*There is a significant difference between the outsourcing practices of govt. funded and non-govt. funded libraries*’ has been partially true because funding source wise significant difference if found in few activities and services viz. Library Automation, Software Development, Hardware Maintenance and Electronic Document Supply (Table 4.51, Table 4.52, Table 4.54 and Table 4.56).

**HYPOTHESIS-4:** The hypothesis that ‘*Libraries outsource due to lack of the required permanent human resources and to improve the quality and quantity of the services*’ has come true, as 88.23% libraries prefer to use outsourcing to cope up with the problem of staff shortage and 79.41% libraries feel that outsourcing increases the quality of the libraries’
products and services and the quantity of library product and services each (Table 4.80).

**HYPOTHESIS-5:** The hypothesis that ‘Libraries tend to outsource both Professional and Non-Professional Activities and Services’ has come true, as majority of the librarians and library staff agreed that outsourcing is useful for Professional as well as Non-Professional library activities and services. (Table 4.33-4.34, Table 4.41-4.67).

**HYPOTHESIS-6:** The hypothesis that ‘There is a significant difference between the type of outsourcing used and location of Science & Technology libraries’ has been rejected because there is no significant difference found between the outsourcing practices adopted by the S & T libraries their locations (Table 4.35).

**HYPOTHESIS-7:** The hypothesis that ‘There is a significant difference between the outsourcing of Professional-Manual and Professional-Automated Activities and Services’ has come true, as majority of the libraries using outsourcing for Professional-Automated activities & services as compared to Professional-Manual library activities & services (Table 4.41 to Table 4.57).

**HYPOTHESIS-8:** The hypothesis that ‘There is a significant difference between the outsourcing of Professional-Automated Activities and location of Science & Technology libraries’ has been partially true because state wise significant difference if found in two Professional-Automated activities and services viz. Digitization and Assigning subject Headings (Table 4.53 and Table 4.55).

**HYPOTHESIS-9:** The hypothesis that ‘Libraries intend to reuse outsourcing and desire to expand its scope’ has come true as 76.47% libraries wanted to continue outsourcing and 70.59% libraries want to expand the areas of activities of outsourcing in future. Maximum libraries want to expand the use of outsourcing for Professional-Automated and Non-Professional Activities and Services. Among Professional-Automated activities and
services Digitization (58.82%) work got the top rank followed by RFID Tagging and Maintenance (32.35%). Binding and Reprography (14.70%) are at the top priorities of libraries in Non-Professional Activities and Services (Table 4.76 to Table 4.79).

5.3 CONCLUSION

With the changing trends in libraries’ functioning in this information era, it is difficult for the libraries to concentrate on all the activities and themselves services and to fulfill the novel, varying and increasing expectations of the ICT savvy users. Libraries need to reconsider, replan, restructure and reengineer their activities and services to concentrate more on users’ services. In the present time of economic crises, shrinking budgets and staff, libraries need to adopt some alternates to keep its goodwill and reputation. Outsourcing is adopted globally as a universal alternate to cope up with these problems in every sphere of life, so are as the libraries are concerned they are adopting outsourcing of some of their activities and services. Though the Indian libraries do adopt outsourcing in different areas, however, these are hesitant in openly accepting these facts. The results of present study give a clear picture of the outsourcing scenario in science and technology libraries in northern India. This survey confirms that outsourcing has become a common practice in majority of the science and technology libraries in Northern India however, they use only selective outsourcing. These libraries have been using outsourcing since many years, contrasting to international scenario the Indian libraries abstain to outsource Professional-Manual activities and services rather prefer to use outsourcing of the Professional-Automated and Non-Professional activities and services. The preference of outsourcing by librarians is visible from their yearning to continue and expand the scope of outsourcing in other activities also. Majority of the libraries prefer to use outsourcing to cope with the problems of staff shortage and shrinking budget.

Generally outsourcing is considered to be anti-staff and anti-professional activity. However, Indian library professional staff is supportive to outsourcing
because it reduces their workload, improves their skills and professional competencies. Majority of the library professionals working in libraries are not the full time/ permanent staff because government is also encouraging outsourcing of human resources as it relieves administration from a lot of liabilities towards staff, resulting in saving money.

## 5.4 Suggestions

1. In order to run the libraries effectively and smoothly and provide better, innovative and more services to their users, the authorities of the institutions must appoint the permanent library professionals in the libraries.

2. In order to cope with shrinking budget and lesser staff, Librarians should become proactive towards adopting technology, especially web-based technologies in order to provide new value added services to their user e.g.
   a) Web based services: Blogs, Wikis, Social Networking, Mashup, RSS, Social Cataloguing, Screencasting, Podcasting, Virtual Environment, Autocasting, Vodcasting etc.
   b) Library Websites, Portals and Subject Gateways etc. should be proposed and used extensively.

3. In the current ICT era the traditional functioning, services and environment needs to be modified. So, the librarians should start replanning, restructuring and reengineer the work flow process and existing services, which will reduced the human effort, time and money and enable librarians to introduce new services.

4. Worldover libraries have marched ahead and are taking advantage of crowdsourcing and cloudsourcing to reduce their efforts, time-consumption, staff requirement and enhancement on the one hand and on the other hand to improve their collection, efficiency and services. The Indian libraries need to think, plan and start taking advantage of these new web based facilities.
5. The LIS schools in India need to revise their curriculum more frequently keeping in view the technological developments and the market requirement.

6. In case the librarian needs to outsource its activities and services, he should first carefully evaluate the need and benefits of outsourcing and the areas and activities of libraries need to be outsourced, before implementing outsourcing in the library.

7. Before outsourcing any of library activity/service the librarian should study the pros and cons of outsourcing and decided the type/level of outsourcing suitable for the library and prepare a proper thorough plan.

8. The outsourcing vendor should be selected carefully keeping in mind the experience and considering the references of the other libraries.

9. While outsourcing any of the activity/service, initially partial/selective outsourcing should be adopted instead of the whole activity.

10. The librarian should draw and elaborate agreement including the expectations and responsibilities of the outsourced vendor and the penalties in case of failure.

11. The library must regularly evaluate the outcome of the outsourced activity/service.

**OUTSOURCING BASED MODEL PROPOSED FOR LIBRARIES**

The various models available in the BPO and IT sectors have been studied and explained in *Chapter 1: Introduction*. On the basis of these models the concluding phases of outsourcing life cycle in libraries has been derived and proposed, which includes various phases viz. Planning, Proposal Development, Negotiation, Implementation, Management and Completion or Termination phase. These phases of outsourcing lifecycle are given below in Figure 5.1
a) **Planning Phase**: Before making the decision to outsource any function/service of the library, Library Committee/librarian must identify and compare the actual cost of both providing the service in-house or buying it from the vendor. They may also want to provide a better service at the same price rather than just achieve a lower cost service.

In this phase Library Committee/librarian needs to determine the objective, scope and feasibility of outsourcing function/service. Librarian needs to realize that there are high initial costs associated with entering an outsourcing agreement. Therefore, they also need to plan the total effort in terms of time, budget and necessary resources for this.

This phase is time consuming and involves in-depth examination of everything related to outsourcing project. Outsourcing creates the expectations of improved or sustained level of quality. Librarians also encounter difficulties when they attempt to specify the quality aspects of a service/function. Librarians probably do not have a clear idea of how to measure quality (Ogburn, 1994).

Too often librarians assume that the vendor will provide a quality product. However, the vendor will not do so unless quality is specified in the contract. In order to specify the quality in the contract, the following areas need to be defined: Completeness, Consistency, Accuracy and Adherence to
standards. Furthermore, an acceptable error rate and the manner in which quality control will take place have to be spelled out.

b) **PROPOSAL DEVELOPMENT PHASE:** Once the Library Committee/librarian has decided that outsourcing is the preferred solution for a particular library function/service, they need to decide administrative and technical specifications for such tasks. The most widely used method is a Request For Proposal (RFP), specifying the library’s needs and the vendor’s responsibilities related to that function/service.

The RFP (Request For Proposal) is a statement of mandatory and desirable conditions that a vendor need to fulfill the requirements of an intended contract. Both mandatory and desirable conditions must be specified because no vendor can fulfill 100% of the library expectations. The RFP process is crucial to the success of outsourcing.

c) **SELECTION AND NEGOTIATION PHASE:** After the RFP development, library makes a call for proposals. In response to that various vendors send proposals to the library. After collecting and analyzing the responses from the vendors, librarian needs to choose the right vendor for that project. Choosing the right vendor is critical. Following points may be kept in the mind while selecting a vendor: Vendor’s commitment to quality, Financial stability, Reference/Reputation and Scope of the Resources etc.

Vendor commitment can be checked from references provided by vendor. In order to determine how the vendor’s work style fits within the library, vendors can be invited to give presentations. After that librarian has an opportunity to interview different vendors and compare their work styles. Finally choose the most compatible vendor for the library.

Longer contract gives benefits to the vendor and a shorter contract is advantageous to the library. Harrar (1993) said that “outsourcing contracts in the information technology sector have an average length of nine years. In contrast, Hirshon and Winters (1996) opined that “library contracts are in force for three to four years placing libraries in a better situation to react to changes.” Libraries should consider several factors before entering into an agreement.
with a vendor. The contract has to be flexible; both sides should be allowed to initiate changes. Renegotiating or terminating a contract after signing is not simple. Minoli (1995) said “an outsourcing arrangement needs to be viewed not just as a service contract but as a strategic alliance involving a long term partnership between the organization and the outsourcing vendor.” Ultimately, the contract is signed by both parties.

d) **IMPLEMENTATION PHASE:** After signing the contract implementation phase begins, the real work starts from here. This phase marks the transition from in-house provision of services to outsourcing. It is the most difficult and disruptive phase of the agreement for both library and vendor need to design and introduce new workflows. Firstly, the vendor needs to understand completely the library’s needs. The vendor then trains the library staff in the new procedures in order to integrate the outsourced service(s) into the library’s workflow. Library employees need to learn how to access the vendor’s system and to use it fully. Each operation has its unusual needs and vendor involvement differs accordingly. During this phase staff will need to modify policies and procedures to achieve the maximum benefits of outsourcing. Vendor assists the library in the transition process and helps in smooth transition of services and guarantees a minimal disruption of operations. In early stages, the library needs to check and test its assumptions at regular intervals.

e) **MANAGEMENT PHASE:** The library needs to retain experienced technical and managerial staff to supervise the outsourced operations. Internal expertise is needed to ensure that expected levels and services and performance are met. In the starting the library needs to review every piece of work that is completed e.g. outsourced cataloguing needs to be checked whether the bibliographic records match the books and all required fields are included in the OPAC, the editing of required fields are correct and errors are noted or not. After a few months, random checking needs to be made to ensure that the process should run smoothly. Libraries should need the vendor to produce periodic performance reports comparing performance against the standards.
reestablished in the contract. Outsourcing operations need to be periodically reevaluated by the library.

f) **COMPLETION PHASE:** At the end the contract period. Librarian makes the decision either to negotiate another contract with the same vendor or to terminate that relationship and align with a new vendor; and the cycle begins again. Alternatively, a decision is made to bring the function back inside the organization.

g) **SUPPORT PHASE:** After the completion of the contract vendor provides time to time maintenance and support to the library if required.

### 5.5 Future Research

The present study covered the S & T libraries in northern India based on the results of this study, the following areas are suggested for future research:

1. An in-depth study of outsourcing in libraries of Higher Education institutes viz. Universities, which need more funds and staff due to more collection and more users, need to be studied.
2. Implementation and implications of crowdsourcing and cloudsourcing in various types of libraries.
3. User satisfaction: In-house vs. Outsourced library activities and services.
4. Extent of outsourcing of Digitization in Indian libraries.
5.6 REFERENCES


