Chapter 6
Major Findings, Recommendations and Conclusion
CHAPTER-6
MAJOR FINDINGS, RECOMMENDATIONS AND CONCLUSION

On the basis of the study conducted in respect of “Cost-Benefit Analysis of Periodicals Collection in Central University Libraries in Uttar Pradesh: A Comparative Study”, some of the major findings and possible suggestions for the improvement of their Journals collection and services have been given in the following paragraphs:

The data collected through survey method by administering a well structured questionnaire, was divided into three parts.

PART-A
LIBRARIANS’ PERSPECTIVE

For the present study the investigator calculated the cost of Journals from the analysis of librarians’ responses of the Central Libraries under study.

6.1. COST ANALYSIS OF JOURNALS FROM LIBRARIAN’S RESPONSES

Library Budget
1. The findings of the study reveals that BHU library got a higher library budget i.e. ₹6,89,63,625 than the central library of AMU, ₹2,38,75,000 in the year 2014-15. On an average library budget in AMU was ₹2,27,81,800 whereas BHU library got a higher average budget ₹5,50,58,354 (Table-5.1, Figure-5.1).

2. It was observed that there was no growth in the budgetary allocation in AMU except for the year 2013-14 and 2014-15. Whereas a fluctuating growth pattern (increasing/ decreasing) of budget was discernible in BHU library. BHU library had an average annual growth of 11.83% in the library budget allocation whereas AMU library had only 1.83% average annual growth in the budget allocation (Table-5.2, Figure-5.2).

Expenditure or Amount Spent on Journals
3. It is further studied that on an average BHU library spent more amount on journals ( ₹2,08,33,977) than the central library of AMU ( ₹1,66,000,00) (Table-5.3, Figure-5.3). For the AMU library, the present budget was found to be insufficient for developing a good journals collection and to meet Researchers needs, an additional amount of ₹40,00,000 was required for Print journals and ₹60,00,000
was required for E-journals as stated by the authorities in charge of the library. In BHU library, the amount spent on subscribing journals is by and large adequate to meet the routine requirements of the Researchers.

**Journals Collection**

4. Central library of BHU was subscribing to more number of journals than the Central library of AMU. On an average BHU library subscribed to 2603 journals (print and e-journals) during the years 2010-14, whereas the central library of AMU subscribed to 741 print journals and one online database (LISA). It is found that a trend of decreasing number of Print journals and increasing number of E-journals is seen in BHU for the years 2010 to 2014. The Pearson correlation between Print Journals and Electronic Journals in BHU was worked out to be – 0.946 indicating high degree of negative correlation i.e. the number of print journals is decreasing while the number of E-journals is increasing, considering the correlation, was tested to be highly significant at p < 0.015 (Table-5.4, Figure-5.4).

**Manpower Cost**

5. Total annual salary of staff of Periodicals Section in Maulana Azad Library (AMU) was ₹47,92,920 during the financial year 2014-15. However, total annual salary of staff of Periodicals Section in Sayaji Rao Gaekwad Library (BHU) was ₹41,53,248 during financial year 2014-15. Thus, it is clear from the analysis that the manpower cost of Periodicals Section is higher in AMU than the manpower cost of Periodicals Section in BHU during the financial year 2014-15 (Table-5.6).

**Total Cost of Journals**

6. Total cost of Journals collection in the central library (Maulana Azad library) of AMU was ₹ 2,08,00,920 in the financial year 2014-15. Whereas the total cost of Journals collection in the central library (Sayaji Rao Gaekwad Library) of BHU was ₹1,75,59,600 (Table-5.7).

**Preference for E-Journals**

7. Librarians of both the libraries preferred E-Journals as they are easy to order, easy to maintain, multiple use, no space problem and no problem of theft and mutilation are the reasons for acquiring E-journals as unveiled by the librarians of the select libraries (Table-5.10).
Impact of E-Journals

8. Librarians of both the Universities agreed that time of staff members as well as users were saved due to use of E-journals (Table-5.11).

9. Regarding the impact of E-journals on the use of Print Journals, librarians of both Universities agreed that usage of Print Journals decreased with the use of E-journals. Besides this, the quality of research and number of research publications had also increased (Table-5.12).

10. There is a heavy impact on users after the introduction of E-journals due to various advantages such as time saving, currency of knowledge and availability of information on the desktop. The number of users visiting the libraries has decreased as they are accessing E-journals from their respective departments, computer centre and hostels.

Methods for Promoting the Use of E-Journals

11. Regarding methods to promote the use of E-journals, both the libraries have adopted provisions for Training programs and library web page links to E-Journal Publishers/Vendors. BHU library also circulates database specific user guide (hardcopy) and subject list of E-journals on library web pages. But both the libraries do not use E-mail alerts to notify new E-journals nor provide general online guidance/tutorials on library use (Table-5.13).

Problems of E-Journals

12. ‘Slow connectivity’ and ‘lack of ICT Knowledge’ are the major problems faced by the users while accessing to E-journals as stated by the librarian of the AMU library. Whereas, librarian of BHU claimed that lack of maintenance was the major problem while providing access to them (Table-5.14).

PART-B

USERS’ PERSPECTIVE

For the present study the investigator calculated the cost of Journals utilizing the data collected from the analysis of responses received from the librarians of the Central Libraries under study and Benefit of Journals were calculated from the analysis of responses received from the users (Research Scholars and Faculty Members) of central libraries of the Universities under study.
6.2. BENEFIT ANALYSIS OF JOURNALS FROM USERS’ RESPONSES

During the present study there were 2123 Research Scholars and 1209 Faculty Members in Aligarh Muslim University (AMU), whereas there were 5037 Research Scholars and 1218 Faculty Members in Banaras Hindu University (BHU). Thus it was observed that there were more Research Scholars in BHU as compared to AMU and the numbers of Faculty Members were almost same in both the Universities.

Usage of Journals Collection

13. Majority of the respondents 34.33% from AMU and 45.60% from BHU used journals daily, followed by twice in a week and twice in a month. Moreover, a small percentage from both the Universities used the journals occasionally (Table-5.15, Figure-5.5).

14. Majority of the Research Scholars (84.43%) in AMU and 83.30% in BHU used journals for research work followed by finding relevant information in the area of specialization, updating their knowledge, writing articles and presentation/project purposes (Table-5.16(a), Figure-5.6(a)).

15. Majority of the Faculty Members (72.5%) in AMU and 90.16% in BHU used journals for finding relevant information in the area of specialization followed by, updating their knowledge, research work, writing articles, teaching work and presentation/project (Table-5.16(b), Figure-5.6(b)).

16. Majority of the Faculty Members 95.83% in AMU and 98.36% in BHU used journals for writing articles in journals/conference proceeding. On the other hand majority of the Research Scholars 93.86% in AMU and 93.83% of the Research Scholars in BHU used journals for writing their thesis and dissertations (Table-5.17(a&b), Figure-5.7(a&b)).

17. A good number of respondents (42.16%) from AMU and 43.68% from BHU read around 10-20 articles per month. In AMU, a lesser percentage of 2.71% users read more than 40 articles per month and 2.08% of the users read more than 40 articles per month in BHU (Table-5.18, Figure-5.8).

18. The users of BHU Central library spent more time in browsing/searching articles in a week than the users of AMU Central library (Table-5.19, Figure-5.9).
Benefits of Using E-Journals
18. Majority of the users 91.86% in AMU and 92.48% in BHU opined that they had access to current and up-to-dated information using E-journals along with the ability to expedite their research process, provided easier and speedier access to information, getting access to a wider range of information and help to improve professional competence (Table-5.20, Figure-5.10).
19. Majority of the users 52.40% in AMU and 51.2% in BHU stated that E-journals had a direct impact on their research publications as they agreed that their research publications had increased after the use of E-journals (Table-5.21, Figure-5.11).

Importance of Journals
20. Majority of the users in AMU (61.14%) and 55.68% in BHU strongly agreed to the statement that journals were important for research work (Table-5.22, Figure-5.12).

Satisfaction Regarding the Use of Journals
21. With respect to the satisfaction level regarding the use of journals, majority of the users 67.52% in BHU were satisfied, whereas in AMU 53.01% of the users were satisfied. It revealed that BHU users were more satisfied with the use of journals than the users of AMU (Table-5.23, Figure-5.13).

Total Benefit of Journals
22. Majority of the users (61.14%) in AMU and 66.56% of the users in BHU stated a common reason for consulting journals in the library as ‘very expensive to purchase’. One cannot afford to subscribe individually, therefore library is the best place for consulting journals (Table-5.24).
23. Total benefit of Journals based on Annual WTP was ₹7,44,84,000 in AMU and ₹12,72,06,000 in BHU. It shows that benefit of Journals in BHU is more than AMU because of the larger number of users (Table-5.26).

Cost-Benefit Analysis of Journals
24. Cost-Benefit Ratio (1:7.2) and Return On Investment (624%) is much higher in BHU library as compared to Cost-Benefit Ratio (1:2.5) and Return On Investment (258%) in AMU library (Table-5.27).

Productivity or Research Output
25. During the year 2013-14, in AMU a total 2074 Research Papers/Articles were published and 159 Books were published by Faculty Members. Total 321 M. Phil./Ph.D. Degrees were awarded and a total number of 210 Research Projects
were carried out. Whereas in BHU during the same year (2013-14) a total of 2669 Research Papers/Articles were published and 175 Books were published. Total 714 M.Phil./Ph.D. Degrees were awarded and a total number of 402 Research Projects were carried out. Hence the Productivity or Research Output of BHU was more than AMU in the year 2013-14 (Table-5.28).

**PART-C**

### 6.3 ANALYSIS OF USAGE STATISTICS OF E-JOURNALS/DATABASES

The usage statistics of E-Journals/Databases subscribed through Consortium (UGC-Infonet Digital Library Consortium) was provided by the libraries of both the Universities under study and the analysis of usage statistics was done and findings are presented in the following paragraphs.

**Use of E-Journals/Databases**

26. On an average the downloaded articles 11,75,890 were quite high in BHU as compared to downloaded articles in AMU (3,89,472) during the period 2012-2014. The articles downloaded in BHU were almost three times more than in AMU. It shows that the usage of E-Journals/Databases is more in BHU than in AMU (Table-5.29).

27. In AMU, the usage of E-Journals/Databases had increased from 3,29,706 to 4,30,476 full-text downloads during the period 2012-2014. In BHU also the usage of E-Journals/Databases had increased from 9,13,698 to 13,43,598 full-text articles were downloaded during the period 2012-2014. It shows the increasing trend of using E-Journals/Databases (Table-5.29, Figure-5.15).

28. During the period 2012-2014 in AMU, the five most used E-Journals/Databases included Science Direct (43.54%), followed by Springer Link (11.79%), JSTOR (10.11%), Wiley-Blackwell (7.97%) and American Chemical Society (6.86%). The five least used E-Journals/Databases included American Institute of Physics (0.45%), Project Muse (0.37%), Portland Press (0.17%), Euclid (0.03%) and SIAM (0.03%) (Table-5.29.1, Figure-5.16).

29. In BHU, during the same period (2012-2014) the five most used E-Journals/Databases included Science Direct (52.44%), followed by Springer Link (10.84%), American Chemical Society (7.88%), Wiley-Blackwell (7.14%) and JSTOR (4.95%). The five least used E-Journals/Databases included Cambridge
University Press (0.37%), Project Muse (0.23%), Portland Press (0.10%), SIAM (0.06%) and Euclid (0.02%). In both the universities, Science Direct and Springer Link were among the most highly used E-Journals/Databases whereas Portland Press, SIAM and Euclid were the least used E-Journals/Databases during the period 2012-2014 (Table-5.29.2, Figure-5.17).

30. A Comparative study of the average use of top five E-Journals/Databases in select Universities during the period 2012-2014 shows that, Science Direct was highly used in AMU (43.54%) and (52.44%) in BHU, followed by Springer Link (11.79%) in AMU and (10.84%) in BHU, JSTOR (10.11%) in AMU and (4.95%) in BHU, Wiley-Blackwell (7.97%) in AMU and (7.14%) in BHU, American Chemical Society (6.86%) in AMU and (7.88%) in BHU (Table-5.29.3, Figure-5.18).

**Cost per Use of E-Journals/Databases**

31. In AMU, JSTOR had the highest cost-benefit ratio and SIAM had the lowest cost-benefit ratio in the year 2014. It indicates that the journals provided by JSTOR were used more and thus was cheaper in terms of cost (₹6.43 or $0.10) whereas SIAM (₹865.15 or $13.94) was expensive as it is costlier in terms of use as its usage is less (Table-5.30, Figure-5.19).

32. In BHU, Royal Society of Chemistry had the highest cost-benefit ratio and SIAM had the lowest cost-benefit ratio in the year 2014. It shows that the journals provided by Royal Society of Chemistry were used more and thus was cheaper in terms of cost (₹2.51 or $0.04) whereas SIAM was expensive (₹213.38 or $3.43) as it was costlier in terms of use as its usage was very less (Table-5.30, Figure-5.20).

6.4 TENABILITY OF HYPOTHESES

Tenability of the hypotheses has been checked in the light of the above findings.

**Hypothesis # 1**

There exists higher Cost than Benefit of Journals in the libraries under study.

Table-5.7 revealed that the total Cost of Journals in the central library of AMU was calculated as ₹ 2,08,00,920 and ₹1,75,59,600 in the central library of BHU for the year 2014-15. Whereas, the total Benefit of Journals was calculated to be ₹ 7,44,84,000 for AMU and ₹12,72,06,000 for BHU during the year 2014-15 (Table-5.26).
It is clear that there is higher Benefit than the Cost of Journals in both the libraries under study in the year 2014-15. Although it appears as though universities are spending more on journals in reality the benefit is more as compared to cost. Therefore hypothesis is rejected.

**Hypothesis # 2**

*The Cost-Benefit Ratio (CBR) and Return on Investment (ROI) of Journals Collection is higher in BHU than AMU.*

The Table-5.27 revealed that the Cost-Benefit Ratio (1:7.2) and Return On Investment (624%) is much higher in BHU library as compared to AMU library. AMU had Cost-Benefit Ratio (1:2.5) and Return On Investment (258%) only.

It is clear that Cost-Benefit Ratio (CBR) and Return on Investment (ROI) of Journals Collection is higher in BHU than AMU. Hence, the hypothesis is proved.

**Hypothesis # 3**

*There are significant differences in the total number of articles read in a month in AMU and BHU.*

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
</table>

On applying the T-test to Table-5.18, the resulting Table-6.1 shows that the t statistic, t= -2.466 and p=0.069, since p>0.05, thus there exists significant differences in the total number of articles read in a month in AMU and BHU.

According to the above analysis and discussions, it can be concluded that there exists significant differences in the total number of articles read in a month in AMU and BHU. Hence, the hypothesis is proved.

**Hypothesis # 4**

*There are significant differences in the time spent in searching articles per week in AMU and BHU.*
Table 6.2: T-test for time spent in searching articles per week

<table>
<thead>
<tr>
<th>Pair</th>
<th>AMU - BHU</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error Mean</td>
<td>Lower</td>
<td>Upper</td>
</tr>
</tbody>
</table>

On applying the T-test to Table-5.19, the resulting Table-6.2 shows the t statistic, t= -2.725 and p=0.072, since p<0.05, thus there is a significant difference between the time spent in searching articles per week in AMU and BHU. Hence, the hypothesis is proved.

Hypothesis # 5

*There is a significant difference in the satisfaction level with the use of Journals collection among the users of AMU and BHU.*

Table 5.23 revealed that 67.52% of the users in BHU were satisfied with the use of Journals whereas in AMU 53.01% of the users were satisfied with the use of Journals. Since, the percentage of users for satisfaction with the use of journals in BHU is more than the percentage of the users in AMU. It shows that BHU users are more satisfied with the use of journals than the users of AMU.

Table 6.3: T-test for level of Satisfaction

<table>
<thead>
<tr>
<th>Pair</th>
<th>AMU - BHU</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error Mean</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>AMU - BHU</td>
<td>-58.600</td>
<td>113.925</td>
<td>50.949</td>
<td>-200.056</td>
<td>82.856</td>
<td>-1.150</td>
</tr>
</tbody>
</table>
On applying the t-test to Table-5.23, the resulting Table-6.3 shows the t statistic, \( t = -1.150 \) and \( p=0.314 \), since \( p<0.05 \), thus there is a significant difference between the satisfaction level of the users of AMU and BHU. Hence, the hypothesis is proved.

### 6.5 RECOMMENDATIONS

In the light of the analysis of data, findings and the opinions received from the librarians and users, the following recommendations are made in order to increase the benefits of Journals.

1. More funds should be made available to the Central library (Maulana Azad Library) of AMU to develop the Journals collections like that of BHU library.
2. The budget allocated to both the libraries should be with the escalating cost of Journals every year.
3. The requirements of users may be fulfilled by adopting a sound collection development policy that may be supplemented by ILL.
4. Maulana Azad Library should subscribe to E-Journals/Databases besides the E-Journals/Databases subscribed under UGC-Infonet Digital Library Consortium, to meet the current information requirements of the Research Scholars and Faculty Members.
5. Both the libraries should maintain statistics for recording the use of Print journals.
6. Both the libraries should subscribe to more number of E-Journals/Databases as they have many advantages.
7. Both the libraries should send E-mail alerts or sms alerts to notify the arrival of new journals to Research Scholars and Faculty Members for increasing the usage.
8. Both the libraries should increase their subscription to more number of consortium for providing maximum benefits of best collection at least cost.
9. Both the libraries should cancel the subscription of the E-Journals/Databases like Portland Press, SIAM and Euclid because they are among the least used E-Journals/Databases, as well as they prove to be expensive as Cost per Use was calculated to be high in the current year 2014.

### 6.6 CONCLUSION

The present study compared the Cost-benefit analysis of Journals collection in the central libraries of AMU and BHU for the current year (2014-15). Findings revealed that BHU library had larger budget and was subscribing to more journals
than the AMU library. Findings revealed that benefits of Journals in BHU are more than AMU because of greater usage subsequent to the larger number of users resulting in a higher Cost-Benefit Ratio and Return On Investment.

The analysis of usage statistics revealed that the articles downloaded in BHU were almost three times more than in AMU. It indicates that the usage of E-Journals/Databases was more in BHU than AMU which further is reflected in the Productivity or Research Output of BHU which is higher that of AMU. The study revealed that in AMU, Science Direct, Springer Link and JSTOR were highly used E-Journals/Databases as compared to Portland Press, Euclid and SIAM which were among the least used E-Journals/Databases. In AMU, the Cost per Use of JSTOR was very low (₹6.43 or $0.10) whereas SIAM had high Cost per Use (₹865.15 or $13.94).

In BHU, Science Direct, Springer Link and American Chemical Society were among the highly used E-Journals/Databases whereas Portland Press, SIAM and Euclid were the least used E-Journals/Databases. The Cost per Use of the journals provided by Royal Society of Chemistry was low (₹2.51 or $0.04) whereas the Cost per Use of SIAM was high (₹213.38 or $3.43).

Both the libraries preferred E-Journals/Databases because of several benefits and cost-effectiveness of E-Journals/Databases. Journals are very important information sources used by Research scholars and Faculty members. Majority of users in both the universities used journals for their research and writing articles. The users of BHU read more number of articles and spent much time than the users of AMU. As a result, users of BHU library were more satisfied with the use of journals than the users of AMU library.

6.7 IMPLICATIONS OF THE STUDY

1. The library authorities as well as the Funding Agencies should improve the journals collection in libraries by increasing the budget allocation for the central library of AMU, so as to provide better access to information sources and services for Research Scholars and Faculty Members.

2. The study may help the librarians to prove the economic value or worth as well as justify the expenditure of journals collection in this era of decreasing financial resources and increasing demands for accountability.

3. The Cost per Use of E-Journals/Databases presented in the study will guide the librarians to evaluate the performance of each E-journal/Database.
4. The study will be helpful for librarians to provide an insight of highly used E-journals/Databases at low cost and less used E-journals/Databases at high cost by guiding them at the time of subscription or renewal of journals.

6.8 RECOMMENDATIONS FOR FURTHER RESEARCH

During the period of the research study, the investigator realized that the following similar studies may be carried out in other areas and on other types of collections in libraries.

1. A similar study may be undertaken to assess the economic value of collections such as Books, E-books, Magazines, Newspapers, Audiovisual materials etc. available in libraries.

2. A similar study can also be conducted to estimate the economic value of services provided by libraries such as circulation service, information services, technical services, reference service and newspaper clipping service etc.

3. Another similar study may be undertaken for measuring the economic value of different types of libraries.

4. A comparative study is also suggested between the libraries of reputed universities and Institutions such as JNU, DU, IITs and IIMs.