Chapter 7

FINDINGS AND CONCLUSION

7.0 Introduction

The present study was intended to report the status quo of the EC libraries affiliated to M.G. University with an aim to identify and study the resource sharing activities by these libraries. A detailed analysis of the various aspects of the above mentioned attributes are made in chapter 5. This chapter aims to present a summary of the major findings of the study, test the formulated hypotheses, provide recommendations based on the findings and to suggest areas of further research.

7.1 Summary of Findings

7.1.1 General Information

1. Among the 22 colleges under study 86% (19) come under the self financing (S.F.) sector, 9% (2) are run directly by the government of Kerala and 5% (1) fall under the government aided sector.

2. All the colleges under the government and aided sector, and 74% (14) colleges in the S.F. sector are PG level colleges.

3. The total number of library memberships ranges from 1501-2000 in 50% of the colleges. Four (18%) libraries have a membership of 1000-1500 and seven (32%) libraries have members ranging from 2001-2500.
7.1.2 Library Collection

4. The number of printed books in the libraries ranges from 10000 to 50000. Majority (81%) of the colleges have a collection of less than 30000 books. The aided college, one government college and one S.F. college possess a collection of more than 40000 books.

5. In all the libraries the collection of books are fully organised using different editions of Dewey Decimal Classification and catalogued according to AACR2.

6. The print periodical collection in different libraries ranges from 45 to 250.

7. The number of Indian journals subscribed by the college libraries ranges from 0 to 125 and majority of the libraries subscribe less than 75 Indian journals.

8. The number of foreign periodicals subscribed by the libraries ranges from 0 to 100. Among the study units, 23% of the libraries including a government college do not subscribe to any foreign journal and another 23% libraries subscribe to more than 50 to 100 foreign journals.

9. Popular magazines are not subscribed by 23% of the libraries under study whereas two colleges in the S.F. sector subscribe more than 50 popular magazines.

10. With respect to the number of subscriptions of periodicals and popular magazines, the S.F. colleges are far ahead than other types of colleges.
11. It is observed that majority of the college libraries have no regular policy for collecting and maintaining the student project reports. Only 36% of the college libraries maintain a collection of student project reports.

12. The number of electronic databases subscribed by the libraries ranges from 0 to 9. Majority of the libraries (73%) subscribes to 5 or more e-databases and 50% of the total number of libraries (all in S.F. sector) subscribe to 7 to 9 databases.

13. IEEE (ASPP) is the widely (77%) subscribed database followed by JGate and Elsevier Science Direct (both 59%).

14. More than half (59%) of the libraries under study have a collection of e-books in their libraries. The collection ranges from 1700 to 8700

15. None of the study units is having a regular policy for the collection development of CDs/DVDs. There are around 300 to 3000 CDs/DVDs in different libraries.

7.1.3 Annual Budget

16. The study identified that 14% of the colleges do not have a regular annual budget whereas on the other end 9% of the colleges have an annual budget of more than 50 lakhs. All these colleges come under the S.F. sector.

17. Majority of the libraries (55%) have an annual budget of below 20 lakhs. The government and aided college libraries fall in this category.
18. In the case of budget allocation also the S.F. colleges score high. A wide gap is visible between the colleges with respect to the annual budget allocation for libraries.

7.1.4 ICT Infrastructure

19. Majority (95%) of the libraries are having server machines. Out of these 32% colleges (all S.F.) have 2 servers, one dedicated for their Digital Library/Institutional Repository.

20. All the colleges are having networked computers in their library. But a wide gap is noticed with respect to the number of computers that ranges from 2 to 98.

21. Only 50% of the colleges under study possess a scanner and all these are S.F. colleges.

22. The number of Bar Code Readers (BCR) in the study units ranges from 1 to 4 and one govt. college and three S.F. colleges do not have any BCR.

23. All the colleges except one in the S.F. sector have UPS facility. Out of these 17 colleges have a centralized UPS facility.

24. All the libraries are having internet connectivity and 59% of the total number of libraries including the aided college library is having WiFi enablance in their campus/library.

25. Only 18% of the libraries are having a library website. These 4 libraries are in the S.F. sector. Majority of the libraries (77%) are having a link and a page for the library in their college website. Libraries that do not have a web presence is 5%.
Findings and Conclusion

26. All the libraries have automated their library housekeeping operations but no single library has completely shifted to a fully automated library system. Generally the circulation and cataloging/technical processing operations are found to be automated in all the libraries.

27. A variety of automation software are used in the libraries that includes integrated library management systems (ILMS) and locally developed software for automating certain operations.

28. Locally developed software are used in 18% of the libraries and the majority of the libraries (82%) use ILMS for library automation. The most popular software is SOUL followed by KOHA and LIBSOFT.

29. Only 3 libraries (14%) provide webopac facility.

30. The library catalogs of 32% of the colleges are compatible with certain international standards.

31. A digital library/institutional repository (DL/IR) is present in 46% of the colleges. All these colleges are in the S.F. sector. E-question papers are the popular content (90%) in the DL/IR followed by e-books (80%). Only one DL uses web 2.0 applications in the form of RSS feeds.

32. DSpace is used in 60% of the colleges to build their DL and 20% of the libraries use Greenstone for building their DL. Another 20% of the DLs are built on a proprietary software viz; e-shelf.
7.1.5 Services

33. Lending of books is the only traditional service that all the libraries provide. This is followed by reprographic (86%) and reference (82%) services.

34. The most common e-information service is access to e-journals and databases (91%). This is followed by OPAC service (82%). NPTEL is the most common E-learning service provided by these libraries.

35. Online User Education Programme is the least common e-information service. Online reservation, chat reference/virtual reference service, etc are not been provided by any of these libraries.

7.1.6 Library Personnel

36. There is no regular pattern for professional staff positions, salary and designation in these libraries. Majority of the colleges have four or more library professionals.

37. In one college there is only one library professional, a retired person. This library is managed by 3 library attendents.

38. Majority of the library professionals are post graduates in Library and Information Science and 2% of the library professionals hold a PhD degree. But they are retired persons serving their libraries on contract basis.
39. Majority of the professionals are found to be having an average knowledge in handling computers. About 5% of the professionals are highly skilled and 5% are not at all skilled in handling computers.

40. Librarians of 5 colleges claimed that they receive AICTE pay scale with local dearness allowance. Some of the librarians are getting salary in state pay scale for their corresponding positions. Nearly 50% of the professionals receive a salary between Rs.10000/- and Rs.20000/-. 

7.1.7 Resource Sharing
41. Only one third of the total libraries are involved in some RS activities. All these libraries are members in DELNET consortium. Four libraries participate in the union catalog of DELNET.

42. The libraries are involved in inter library loan (ILL), document delivery service (DDS), union cataloging (UC), sharing of expertise (SE) and exchange of publications (EP). The libraries that are involved in ILL (3 libraries) & EP (1 library) are co-operating with the sister institutions of their respective managements in this aspect.

43. About 77% of the librarians opined that their libraries need RS to effectively satisfy the user needs and 86% expressed their willingness to join a regional consortium. Two (9%) of the librarians doubted whether their respective managements will be willing to join the consortium. But these librarians personally expressed their willingness to join.
44. Sharing of expertise, ILL/DDS and staff training are the preferred RS activities by the librarians. Lack of uniform standards in technical organization of collection is pointed out by the librarians as the major hindrance towards effective cooperation.

7.1.8 Categorization of Libraries

45. Grouping of college libraries based on certain criteria developed for this study revealed that 32% of the colleges are ‘poor’ with respect to their library facilities, 41% of the libraries come under the group ‘medium’ and the remaining college libraries (27%) fall under the group ‘rich’.

46. A wide gap is visible among the study units with respect to their resources and services and nearly one third of the colleges under the study are poor with respect to the library facilities.

7.1.9 Use of Library

47. The primary purpose of library visit by users is found to be reference. Student users rarely use their libraries for general reading. All the student users make use of the textbook collection in their libraries.

48. Majority of the respondents are regular visitors to their libraries—either daily, on alternate days or weekly.

49. Majority of the student users spend less than 1 hour in their libraries, whereas majority of the faculty members spend an average of 1 to 3 hours in the libraries.
50. Majority (90%) of the users are aware about the internet facility provided by their libraries. This is followed by e-journals and databases. World Wide Web is the widely used e-resource followed by e-journals and databases.

51. Use of different e-resources is found to be dependent on the category of the users and status of institutions. The Chi-square ($\chi^2$) analysis conducted to test the dependency proved to be significant at 0.05 level. Usage of e-resources is found to be less in poor colleges. Majority of the users from ‘poor’ colleges pointed out the unavailability of e-resources as the main reason for their non-use of e-resources.

52. Wikis are the most frequently used e-resources by all the categories. This is followed by e-journals and databases. UG students less frequently use e-resources than the other category of users.

53. The reasons for non-use of e-resources are found to be unawareness about the available resources as well as unavailability of needed resources.

54. Majority of the users (in all categories) opined that they use e-resource for the purpose of study and research. Student users' second major purpose was for aiding project/research work. Whereas for faculty members, their second major purpose was updating subject knowledge.
55. The student users’ (particularly PG students) preferred place for using e-resources is their home with their personal computers/laptops. Whereas more than half of the teachers opined that their preferred place for using e-resources is the college library.

56. Problems encountered while accessing e-resources varied among categories. Chi-square ($\chi^2$) test performed to test the dependency of the problems encountered with category proved to be significant at 0.01 level.

57. Print is the preferred format for textbooks. About half of the users preferred electronic format for library catalogs. Majority of the users selected ‘Both’ for journals. On an overall it is observed that about 40% of the users prefer print formats, 20% prefer electronic formats and 40% selected both for their library resources.

58. Majority (63%) of the respondents opined that their libraries do not provide sufficient number of computers to access e-resources. A striking difference is observed between the responses from facility rich and poor colleges in this regard.

7.1.10 Satisfaction with Library Resources

59. Only a few numbers of users are fully satisfied with the print collection of the libraries. There is a significant difference between categories with respect to their level of satisfaction with print resources. The Chi-square ($\chi^2$) analysis conducted to test the dependency of status of institution with the level of
satisfaction of print resources proved to be significant at 0.01 level.

60. All the categories of users are generally least satisfied with the e-resources provided by the libraries. But the level of satisfaction varied with categories and status of institutions. The Chi-square ($\chi^2$) analysis to test the dependency of these variables proved to be significant at 0.05 level.

61. In spite of the availability of a considerable e-resource collection, majority of the respondents opined that the e-resources provided by their libraries are inadequate to satisfy their needs. There is a significant difference in opinion between the users from rich and poor colleges about the adequacy of their library resources.

62. The level of satisfaction with ICT facilities are also dependent on category and status of institutions and the Chi-square ($\chi^2$) analysis to test the same proved to be significant at 0.01 level.

63. More than half (54%) of faculty members and a vast majority of the student users opined that the e-resources provided by their libraries are inadequate. The users of poor colleges opined that both the print and e-resources of their libraries are not adequate to satisfy their needs. Whereas the users of the rich colleges are of the view that the print and e-resources provided by their libraries are adequate to satisfy their needs. The $\chi^2$ test proved that the opinion regarding adequacy of different library resources among different groups of users is significantly different.
64. Majority of the respondents from poor colleges opined that the number of library staff is inadequate in their libraries.

7.1.11 Use of Inter Library Loan Service

65. Majority of the respondents opined that they do not know whether their libraries provided this service. Only 6% of the total users knew that their libraries provided the service.

66. Among these 24 users, only 3 users have availed the service. 5 respondents replied that they have requested for the service but not availed it.

7.1.12 Need for Resource Sharing

67. Majority of the users felt that RS is needed to satisfy their information needs. Only 12% of the users opined that they do not need resource sharing.

68. The idea of a Virtual Resource Sharing Centre is supported by 77% of the college librarians and 98% of the users and opined that they wanted to access the VRSC. Among the rest of the librarians, 18% opined that they personally supported the idea but they require the consent of their respective managements to respond officially to this matter.

7.1.13 Likelihood to Access VRSC

69. Subscribed/purchased e-books is found to be the most demanded item by the users (88%), to be included in the VRSC. This is followed by subscribed e-journals and e-learning platform.
70. Majority (87%) of the teacher respondents opined that they are willing to or will try to contribute learning objects to the VRSC.

71. About 95% of the respondents are having a high expectation about the VRSC.

7.2 Testing of Hypotheses

The study put forward 7 hypotheses related to the research problem. Different types of descriptive and inferential statistics are applied to prove all these hypotheses. Chi-square ($\chi^2$) analysis as a non-parametric test is done in most cases to test the hypotheses.

H1: There is a significant gap between the colleges with respect to their library facilities

From the inference drawn from the tables 5.4, 5.5, 5.6, 5.7, 5.9, 5.10, 5.11 and the ranking of the college made vide table 5.26 and from the inferences drawn from the figures 5.2, 5.3, 5.5, 5.19, and 5.28 a wide gap is visible between the colleges with respect to their library facilities. Hence, it is concluded that H1 stands valid.

H2: There is no uniform pattern for staff strength and salary among these libraries

The discussions made under 5.6.1 and the figure 5.19 makes it clear that there is a wide gap among the libraries with respect to their staff strength since the number of professional staff in each library ranges from 1 to 6. It is also evident that there is no uniform pattern for professional staff strength among the libraries. The discussions made under 5.6.4 reveals that the salary of the professional staff varies to a great extent and there are no standards for designation and salary of
library professionals in these college libraries. 

*Hence H2 stands valid.*

**H3: There is no effective means of cooperation among these libraries**

Discussion under 5.7.1 and the figure 5.23 shows that only one third of the libraries are involved in some RS activities (ie., a membership in the DELNET consortium). It is also clear that there do not exist any type of cooperation among the study units or with similar libraries in the state. Discussions under 5.7.2 and the figure 5.25 also reveals that there are no effective means of cooperation among the study units and majority of the librarians are willing to join a regional consortium of EC libraries. *Hence H3 is found to be valid.*

**H4: Usage and user satisfaction regarding e-resources are dependent on their category and status of institution**

For the purpose of analysis and testing, H4 is split up into 2 as follows:

- **H4a:** Usage of e-resources is dependent on the category and status of institution.
- **H4b:** Users’ satisfaction with e-resources is dependent on their category and status of institution

**H4a: Usage of e-resources is dependent on the category and status of institution.**

Here the null hypothesis is taken as the ‘usage of e-resources is independent of the category and status of institution’. Separate chi-square tests are conducted to test the dependency of usage of e-resources with the other 2 variables which are presented in tables 5.30 and 5.31. The calculated value of $\chi^2$ for a degree of freedom 2 is found to be above the table values in both the cases at 0.05 level of significance.
The frequencies of use of various e-resources is further compared with the category of users and is presented in the table 7.1.

**Table 7.1 Frequencies of Use of E-Resources Vs Category of Users**

<table>
<thead>
<tr>
<th>Item</th>
<th>Usage</th>
<th>UG</th>
<th>%</th>
<th>PG</th>
<th>%</th>
<th>FAC.</th>
<th>%</th>
<th>Chi-square; df=4</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-books</strong></td>
<td>Frequently</td>
<td>118</td>
<td>36%</td>
<td>28</td>
<td>40%</td>
<td>29</td>
<td>34%</td>
<td>5.498</td>
<td>0.700</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>135</td>
<td>41%</td>
<td>26</td>
<td>37%</td>
<td>44</td>
<td>52%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>77</td>
<td>23%</td>
<td>16</td>
<td>23%</td>
<td>12</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E-journals</strong></td>
<td>Frequently</td>
<td>103</td>
<td>31%</td>
<td>40</td>
<td>57%</td>
<td>49</td>
<td>58%</td>
<td>42.83</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>144</td>
<td>44%</td>
<td>24</td>
<td>34%</td>
<td>34</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>83</td>
<td>25%</td>
<td>6</td>
<td>9%</td>
<td>2</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Online cat.</strong></td>
<td>Frequently</td>
<td>57</td>
<td>17%</td>
<td>22</td>
<td>31%</td>
<td>13</td>
<td>15%</td>
<td>19.94</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>48</td>
<td>15%</td>
<td>4</td>
<td>6%</td>
<td>23</td>
<td>27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>225</td>
<td>68%</td>
<td>44</td>
<td>63%</td>
<td>49</td>
<td>58%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cd-roms</strong></td>
<td>Frequently</td>
<td>27</td>
<td>8%</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>14%</td>
<td>18.49</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>81</td>
<td>25%</td>
<td>26</td>
<td>37%</td>
<td>31</td>
<td>36%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>222</td>
<td>67%</td>
<td>44</td>
<td>63%</td>
<td>42</td>
<td>49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E-learning platforms</strong></td>
<td>Frequently</td>
<td>26</td>
<td>8%</td>
<td>12</td>
<td>17%</td>
<td>28</td>
<td>33%</td>
<td>93.87</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>75</td>
<td>23%</td>
<td>36</td>
<td>51%</td>
<td>40</td>
<td>47%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>229</td>
<td>69%</td>
<td>22</td>
<td>31%</td>
<td>17</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E-resources of other libraries</strong></td>
<td>Frequently</td>
<td>7</td>
<td>2%</td>
<td>4</td>
<td>6%</td>
<td>7</td>
<td>8%</td>
<td>28.11</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>106</td>
<td>32%</td>
<td>32</td>
<td>46%</td>
<td>46</td>
<td>54%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>217</td>
<td>66%</td>
<td>34</td>
<td>49%</td>
<td>32</td>
<td>38%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wikis</strong></td>
<td>Frequently</td>
<td>196</td>
<td>59%</td>
<td>64</td>
<td>91%</td>
<td>50</td>
<td>59%</td>
<td>47.35</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>75</td>
<td>23%</td>
<td>2</td>
<td>3%</td>
<td>33</td>
<td>39%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>59</td>
<td>18%</td>
<td>4</td>
<td>6%</td>
<td>2</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E-question papers</strong></td>
<td>Frequently</td>
<td>93</td>
<td>28%</td>
<td>10</td>
<td>14%</td>
<td>32</td>
<td>38%</td>
<td>16.12</td>
<td>0.040</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>126</td>
<td>38%</td>
<td>29</td>
<td>41%</td>
<td>37</td>
<td>44%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>111</td>
<td>34%</td>
<td>31</td>
<td>44%</td>
<td>16</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETDs</strong></td>
<td>Frequently</td>
<td>33</td>
<td>10%</td>
<td>46</td>
<td>66%</td>
<td>21</td>
<td>25%</td>
<td>160.00</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>97</td>
<td>29%</td>
<td>18</td>
<td>26%</td>
<td>50</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>200</td>
<td>61%</td>
<td>6</td>
<td>9%</td>
<td>14</td>
<td>16%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The frequencies were measured in a 5point scale and reduced to the 3point scale*
Chapter 7

The \( \chi^2 \) values are much greater than its tabled value for df=4 which makes it clear that frequencies of use of all the e-resources except E-books are dependent on the category of users at 0.05 level of significance.

Hence the null hypothesis is rejected and the alternative hypothesis \( H4a \) is accepted.

**H4b: Users’ satisfaction with e-resources is dependent on their category and status of institution**

Here the null hypothesis is stated as 'Users' satisfaction with e-resources is independent of their category and status of institution'. Testing of this hypothesis is done from two points of views:

i) Analysis of users’ satisfaction with individual items &

ii) Analysis of individual user's satisfaction with all the types of e-resources

For this a list of seven different types of e-resources were presented before the users and their satisfaction with each item was recorded.

The \( \chi^2 \) tests were conducted to test the dependency of satisfaction with individual e-resources against category and status of institution. Tables 5.39 and 5.40 shows that the \( \chi^2 \) values are greater than the table value for a degree of freedom, df=4 at 0.05 level of significance.

The analysis of individual user’s satisfaction against user category and status of institution for all the e-resources is presented in the table 7.2 and 7.3 respectively.

The calculated values of \( \chi^2 \) in both the cases are greater than the table values for df=4 for a significance level of 0.01.
Findings and Conclusion

Table 7.2 Individual User’s Satisfaction with E-Resources Vs Category

<table>
<thead>
<tr>
<th>Level of Satisfaction</th>
<th>Category</th>
<th>Chi-Square (df = 4)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UG</td>
<td>PG</td>
<td>FAC</td>
</tr>
<tr>
<td>FULLY SATISFIED</td>
<td>40 (12.1%)</td>
<td>2 (2.9%)</td>
<td>16 (18.8%)</td>
</tr>
<tr>
<td>PARTIALLY SATISFIED</td>
<td>70 (21.2%)</td>
<td>28 (40%)</td>
<td>36 (42.4%)</td>
</tr>
<tr>
<td>LEAST SATISFIED</td>
<td>220 (66.7%)</td>
<td>40 (57.1%)</td>
<td>33 (38.8%)</td>
</tr>
</tbody>
</table>

Table 7.3 Individual User’s Satisfaction with E-Resources Vs Status of Institution

<table>
<thead>
<tr>
<th>Level of Satisfaction</th>
<th>Status of Institution</th>
<th>Chi-Square (df = 4)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
<td>Medium</td>
<td>Rich</td>
</tr>
<tr>
<td>FULLY SATISFIED</td>
<td>2 (1%)</td>
<td>14 (6%)</td>
<td>42 (30%)</td>
</tr>
<tr>
<td>PARTIALLY SATISFIED</td>
<td>5 (4%)</td>
<td>60 (29%)</td>
<td>69 (49%)</td>
</tr>
<tr>
<td>LEAST SATISFIED</td>
<td>129 (95%)</td>
<td>135 (65%)</td>
<td>29 (21%)</td>
</tr>
</tbody>
</table>

From the above inferences the null hypothesis is rejected and $H_{4b}$ is accepted.

Hence $H_4$ is proved to be valid.

H5: Majority of the users are dissatisfied with their library resources

The library resources of the study units are generally divided into print, electronic, ICT facilities and Personnel for the purpose of testing of this hypothesis. The level of satisfaction of users with the print resources provided by the libraries is presented in figure 7.1

The figure makes it clear that satisfaction of users with different print resources shows a uniform pattern and more number of users are partially satisfied with all the print resources of their libraries.
Figure 5.44 represents the level of user satisfaction with e-resources and is evident that the users are least satisfied with it. Figure 5.45 represents the level of user satisfaction with ICT facilities and shows that more number of users (40%) are partially satisfied with it. With respect to the adequacy of number of professional staff, a particular inclination is not observed (table 5.44). Half (50%) of the users opined that the staffs are adequate whereas another 50% opined that the number of professional staff is inadequate.

From the above discussions it is inferred that the users are partially satisfied with the library resources thereby rejecting the hypothesis.

**Hence H5 is found to be invalid.**

**H6:** Satisfaction of users with their library resources is dependent on category and status of institution
The null hypothesis for this case is stated as 'Satisfaction of users with their library resources is independent on their category and status of institutions'. The $\chi^2$ tests conducted vide tables 5.38, 5.40 and 5.42 to test the dependency of satisfaction with status of institution show that the calculated values of $\chi^2$ are greater than the table values at 0.05 level of significance. Similarly the $\chi^2$ analyses conducted vide tables 5.39 and 5.41 to test the dependency of satisfaction with category also show a value for $\chi^2$ which is greater than the table values at 0.05 level of significance. Thus the null hypothesis is rejected and found that the satisfaction of users is dependent on the variables. 

**Hence H6 is proved as valid.**

**H7: Users have a positive attitude towards the VRSC**

The discussions made under 5.15.1, 5.15.3, 5.15.4; the figures 5.49, 5.50, 5.51, 5.52; and the table 5.49 makes it clear that the users have a very high expectation about the proposed VRSC. The attitude of the users is further depicted in table 7.4

<table>
<thead>
<tr>
<th>Attitude towards VRSC</th>
<th>UG</th>
<th>PG</th>
<th>FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSITIVE</td>
<td>320  (97%)</td>
<td>70  (100%)</td>
<td>83  (98%)</td>
</tr>
<tr>
<td>NEUTRAL</td>
<td>7   (2%)</td>
<td>-</td>
<td>2   (2%)</td>
</tr>
<tr>
<td>NEGATIVE</td>
<td>3   (1%)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>330  (100%)</td>
<td>70  (100%)</td>
<td>85  (100%)</td>
</tr>
</tbody>
</table>

From the table it is evident that users have a very positive attitude towards the VRSC.

**Hence H7 is valid**
7.3 Recommendations of the Study

Based on the observations and findings of the present investigation, the following recommendations are being put forward.

- Libraries in the government and aided sectors should be allotted adequate financial assistance for building equivalent facilities as their S.F. counterparts do.
- Effective user orientation and information marketing programmes may be conducted by each library to promote the use of e-resources.
- User-friendly library web portals that serve as a gateway to subscribed and open contents should be designed by each library.
- Regular policies should be framed at college level to collect and archive the electronic versions of the final year BTech project reports and MTech dissertations by the college libraries.
- Compatible library catalogs and web OPACs are the essential components of an effective resource sharing environment. It is highly recommended that the catalogs of the ECs should be made compatible with some international standards. For those libraries using local software, shifting towards some open source integrated library management system is recommended.
- The established digital libraries should explore the possibilities of metadata harvesting between similar libraries.
- The managements and government should take initiatives to sanction sufficient number of professional staff positions for the smooth running of the libraries.
- The designation, salary and allowances of the professionals may be defined clearly and follow uniform standards. To cope up with the technological challenges and to harness new technologies,
Findings and Conclusion

Librarians may be given proper training as well as sponsorships for attending training programmes conducted by reputed institutions.

Stipulations made by the AICTE regarding the annual subscription of e-databases exult great pressure to the institutions in finding lakhs of rupees each year. Finding a viable solution to this problem is the need of the hour. It is recommended that the institutions should seriously take up this matter and make discussions at various levels to negotiate the price of subscribed contents along with alternate ways for shared acquisition and access.

7.4 Areas of further Research

- The availability and usage of different types of e-resources by different groups of engineering academics belonging to different branches can be studied to identify the strengths and weaknesses of e-resources available in different fields of engineering.
- The cost effectiveness and cost benefit analysis of consortial purchases of electronic resources shall be made to review the existing purchase options.
- The success and problems of established national and regional consortium.
- The impact of e-journals and databases on the academic output of engineering students and teachers can be studied.
Chapter 7

7.5 Conclusion

The study succeeded in accomplishing its objectives. The analysis proved that a wide gap exist between the colleges in terms of their resources and facilities. It is also revealed that some of the self financing colleges are far ahead than the government and aided colleges that has been established decades ago. Users generally felt that their library resources are inadequate to satisfy their needs and opined that an effective resource sharing will help to solve this problem. Many of the college librarians expressed their willingness to share their resources for the common benefit of the community. Since the study collected a census type data of the colleges (established before 2009) under M.G. University, the findings can be generalized for the Kerala state as a whole.

The proposed model of the VRSC, if implemented will result in the optimum utilization of existing resources, open content and linked data. Users and librarians are enthusiastic to reap the benefits of the centre. The same model can be implemented for other universities or for the Kerala state as a whole.

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