A Comparative Study of Library Automation in First Grade College Libraries in Four Districts of Karnataka

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Abstract - **The present paper compares library automation in first-grade college libraries affiliated to the University of Mysore. A structured questionnaire was used to collect primary inputs from college libraries to understand the present status. A total of 160 colleges were taken up for the study in which 135 (84.37%) colleges responded,15 first grade college libraries did not have librarians and ten librarians did not respond. The study's findings reveal that 94 (69.62%) college libraries are automated. Among them, 29 (30.85%) college libraries are fully automated, 65 (69.14%) college libraries are partially automated and 41 (30.37%) libraries are not automated.   The study's findings reveal that all autonomous colleges are automated—the main reason for not automating the library in Government colleges, Private aided colleges and Unaided colleges are inadequate of finance and lack of trained manpower. It is suggested that the librarians have to attend intensive training programs on deputation or become proficient in automation work to provide effective and efficient services to users.**

Keywords: **Library automation, college libraries, software**

I. INTRODUCTION

Library automation has shifted from an emphasis on local concerns to global concerns. These goals evolved through three incremental phases--the efficiency of internal operations, access to local resources, and access to resources outside the library--before reaching the present stage of addressing interoperability among systems and services.

The challenge facing libraries today is how to act locally--to implement strategies that ensure internal efficiencies and high levels of service to the community--while thinking globally, assuring that local systems can exchange data with other systems located around the world (Borgman, 1997).The key developments in library automation include online database vendors; bibliographic utilities; local online systems, i.e., turnkey circulation systems and academic systems that have incorporated online catalogues, circulation, acquisitions, and serials control; commercial integrated systems; CD-ROMs; local online database searching; microcomputers; the facsimile or fax machine; and future possibilities(Boykin, 1991).

II. REVIEW OF LITERATURE

Abbas (2014) analyzed the Nigeria ICT environment, the current state of automation in Nigerian university libraries with particular reference to Ahmadu Bello University, Zaria and University of Ibadan Libraries and concluded by proposing a model for achieving automated library system in our universities for effective information access, management and delivery based on enormous benefits accruable to libraries that embraced the system. Anas, *et al*. (2014) investigation revealed that 3 of 4 libraries are partially automated, except Al-Barkaat, completely automated. Seventy percent of librarians believe that automation has improved their library's services. Anjanappa

(2014) stated that out of 9 universities in Karnataka, 33.3% of universities used SOUL, 33.3% LIBSYS, 22.2% used New-Genlib software. Rashmi Verma & Sandeepayadav (2014) investigated library software position at Aligarh University, Banaras Hindu University, Allahabad University, and Babasaheb BhimRao Ambedkar University and concluded Liary software worked well in university libraries. Bhagachand (2015), in his study based on Nasik and Malegaon's 14 college libraries, Maharashtra, revealed that various ICT facilities were readily available in the selected libraries, such as computers, printers, photocopier, Internet connectivity, etc. Though Open Source Software like KOHA, Evergreen software was available, all libraries still used local commercial software.

III. OBJECTIVES OF THE STUDY

1. To know the first-grade college libraries that has undertaken automation.
2. To study the present status of the automation of college libraries affiliated to the University of Mysore.
3. To find the reasons for non-automation in college libraries.
4. To know the success level of library automation among college libraries.

IV. METHODOLOGY

The First Grade Colleges affiliated to the University of Mysore, Mysore have been categorized into four types, i.e., Government Colleges, Private Aided Colleges, Private Unaided Colleges, and Autonomous Colleges. A comparative study of these four types was conducted. The details of affiliated colleges to the University of Mysore were taken from the University of Mysore's official website.

The present study used a structured questionnaire as a tool. The questionnaires were distributed to all the160 librarians of first-grade colleges affiliated to the University of Mysore. Besides distributing the questionnaires, informal personal interviews with selected librarians were conducted, and observation in the libraries was also done.

A total of 135 duly filled-in questionnaires were received, with a response rate is 84.37 % (135). It was found that 15 first grade college libraries did not have librarians and ten librarians did not respond. The collected data are tabulated using the SPSS statistical package.

V. DATA ANALYSIS AND INTERPRETATION

TABLE I DISTRIBUTION OF THE QUESTIONNAIRE

Type of Management	Questionnaires Distributed	Questionnaires Received	
		Frequency	Percentage
Government	68	60	88.23
Private Aided	24	19	79.16
Private Unaided	59	47	79.66
Autonomous	09	09	100.00
Total	160	135	84.37

TABLE II NAAC ACCREDITATION OF THE COLLEGES

NAAC Accreditation	Government (N=60)	Private Aided (N=19)	Private Unaided (N=47)	Autonomous (N=09)	Total (N=135)
Yes	41(68.33)	18(94.73)	06(12.76)	09(100.00)	74(54.81)
No	19(31.66)	01(05.26)	41(87.23)	00(00.00)	61(45.18)
Grade Allocated by NAAC (N=74)					
NAAC Grade	Government (N= 41)	Private Aided (N=18)	Private Unaided (N= 06)	Autonomous (N= 09)	Total (N=74)
C	09(21.95)	04(22.22)	02(33.33)	00(00.00)	15(20.27)
B	18(43.90)	10(55.55)	03(50.00)	01(11.11)	32(43.24)
B+	01(02.43)	01(05.55)	00(00.00)	00(00.00)	02(02.70)
B++	05(12.19)	02(11.11)	01(16.66)	02(22.22)	10(13.51)
A	08(19.51)	01(05.55)	00(00.00)	05(55.55)	14(18.91)
A++	00(00.00)	00(00.00)	00(00.00)	01(11.11)	01(01.35)
Note: Figures in parentheses indicate percentage					

It is observed from Table-II that 74 (54.81%) colleges are accredited by the NAAC, and 61 (45.18%) colleges are not accredited by the NAAC.

The Table-II also depicts that 41 (68.33%) Government colleges, 18 (94.73%) Private Aided colleges, 06 (12.76%) Private Unaided colleges and 09 (100.00%) Autonomous colleges are accredited by the NAAC.

About 19 (31.66%) Government colleges, 01 (05.26%) Private Aided colleges and 41 (87.23%) Private Unaided colleges are not accredited by the NAAC. It can also be noted that 32 (43.24%) colleges are accredited with 'B' grade by the NAAC, followed by 15 (20.27%) colleges accredited with'C' grade, 14 (18.91%) colleges accredited with 'A' grade, 10 (13.51%) colleges accredited with 'B++', 02 (02.70%) colleges are accredited with 'B+', and 01 (01.35%) college is accredited with 'A++' grade by the NAAC.

The above table also depicts that 18 (43.90%) Government colleges, 10 (55.55%) Private Aided colleges and 03 (50.00%) Private Unaided colleges are accredited with 'B' grade by the NAAC and 05 (55.55%) Autonomous colleges are accredited with 'A' grade by the NAAC.

The Table III depicts that out of 135 librarians in the First Grade College libraries, 78 (57.77%) are 'Male' and the remaining 57 (42.22%) are 'Female'.

The Table III also shows that 35 (58.33%) librarians from Government colleges, 10 (52.63%) librarians from Private Aided colleges, 28 (59.57%) librarians from Private Unaided colleges and 05 (57.77%) librarians from Autonomous colleges are 'Male'. About 25 (41.66%) librarians from Government colleges, 09 (47.36%) librarians from Private Aided colleges, 19 (40.42%) librarians from Private Unaided colleges and 04 (44.44%) librarians from Autonomous colleges are 'Female'.

TABLE III GENDER-WISE DISTRIBUTION

Gender	Government (N=60)	Private Aided (N=19)	Private Unaided (N=47)	Autonomous (N=09)	Total (N=135)
Male	35(58.33)	10(52.63)	28(59.57)	05(55.55)	78(57.77)
Female	25(41.66)	09(47.36)	19(40.42)	04(44.44)	57(42.22)
Note: Figures in parentheses indicate percentage					

The Table III depicts that out of 135 librarians in the First Grade College libraries, 78 (57.77%) are 'Male' and the remaining 57 (42.22%) are 'Female'.

The Table III also shows that 35 (58.33%) librarians from Government colleges, 10 (52.63%) librarians from Private Aided colleges, 28 (59.57%) librarians from Private Unaided colleges and 05 (57.77%) librarians from Autonomous colleges are 'Male'.

About 25 (41.66%) librarians from Government colleges, 09 (47.36%) librarians from Private Aided colleges, 19 (40.42%) librarians from Private Unaided colleges and 04 (44.44%) librarians from Autonomous colleges are 'Female'.

TABLE IV PROFESSIONAL QUALIFICATION OF LIBRARIANS

Qualification	Government (N=60)	Private Aided (N=19)	Private Unaided (N=47)	Autonomous (N=09)	Total (N=135)
M.L.I.Sc.	23(38.33)	04(21.05)	33(70.21)	02(22.22)	62(45.92)
M.Phil.	28(46.66)	09(47.36)	08(17.02)	02(22.22)	47(34.81)
PhD	09(15.00)	06(31.57)	06(12.76)	05(55.55)	26(19.25)
Note: Figures in parentheses indicate percentage					

It is observed from the Table IV that 62 (45.92%) of librarians are having professional qualification as 'M.L.I.Sc.', followed by 47 (34.81%) of librarians are having 'M.Phil.' degree and 26 (19.25%) of librarians are having professional qualification as 'Ph.D.' degree. The Table IV also presents that 28 (46.66%) of 'Government' College librarians are having professional

qualification of 'M.Phil.', followed by 09 (47.36%) of 'Private Aided' college librarians are having professional qualification of 'M.Phil.', 33 (70.21%) of 'Private Unaided' college librarians have the professional qualification of 'M.L.I.Sc.,' and 05 (55.55%) of 'Autonomous' college librarians are having professional qualification of 'Ph.D.'

TABLE V EXPERIENCE WISE DISTRIBUTION

Years	Government (N=60)	Private Aided (N=19)	Private Unaided (N=47)	Autonomous (N=09)	Total (N=135)
1-5	00(00.00)	05(26.31)	19(40.42)	00(00.00)	24(17.77)
6-10	00(00.00)	06(31.57)	14(29.78)	02(22.22)	22(16.29)
11-15	39(65.00)	04(21.05)	10(21.27)	01(11.11)	54(40.00)
16-20	08(13.33)	01(05.26)	03(06.38)	03(33.33)	15(11.11)
21-25	09(15.00)	02(10.52)	01(02.12)	02(22.22)	14(10.37)
26 and above	04(06.66)	01(05.26)	00(00.00)	01(11.11)	06(04.44)
Note: Figures in parentheses indicate percentage					

The experience wise distribution of librarians has been summarized in the Table-5. It can be observed from the table that 54 (40.00%) librarians are having experience of '11-15' years as a Librarian, followed by 24 (17.77%) librarians having experience of '1-5' years, 22 (16.29%) librarians having experience of '6-10' years, 15 (11.11%) librarians having experience of '16-20' years, 14 (10.37%) librarians having experience of '21-25' years and 06 (04.44%) librarians having experience of '26 and above'

years as a librarian. The Table V also illustrate that 39 (65.00%) of librarians from 'Government' colleges have experience of '11-15' years as a librarian, followed by 06 (31.57%) of librarians from 'Private Aided' colleges have experience of '06-10' years as a librarian, 19 (40.42%) of librarians from 'Private Unaided' colleges have experience of '01-05' years as a librarian and 03 (33.33%) of librarians from 'Autonomous' colleges have experience of '16-20' years as a librarian.

TABLE VI LIBRARY AUTOMATION

Library Automation	Government (N=60)	Private Aided (N=19)	Private Unaided (N=47)	Autonomous (N=09)	Total (N=135)
Yes	48(80.00)	15(78.94)	22(46.80)	09(100.00)	94(69.62)
No	12(20.00)	04(21.05)	25(53.19)	00(00.00)	41(30.37)
Note: Figures in parentheses indicate percentage					
χ^2=19.332, df=03, P =0.00023341					
ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.088	3	1.363	7.298	.000
Within Groups	24.460	131	.187		
Total	28.548	134			

The information gathered about the automation of first-grade college libraries has been summarized in Table VI. The data shows that that 94 (69.62%) libraries have been automated and the remaining 41 (30.37%) libraries have not been automated.

The Table VI also depicts that 48 (80.00%) Government colleges, followed by 15 (79.94%) Private Colleges, 22 (46.80%) Private Unaided Colleges and 09 (100.00%) Autonomous colleges have been automated. About 12 (20.00%) Government colleges, followed by 04 (21.05%) Private Colleges and 25 (53.19%) Private Unaided Colleges have not automated their libraries.

The χ^2-test and ANOVA conducted for 03 d.f. at the 5% level of significance shows an association between Library Automation and the type of colleges (χ^2=19.332, p=0.00023341<0.05).

TABLE VII STATUS OF LIBRARY AUTOMATION

Status	Government (N=48)	Private Aided (N=15)	Private Unaided (N=22)	Autonomous (N=09)	Total (N=94)
Completely Automated	10(20.83)	04(26.66)	07(31.81)	08(88.88)	29(30.85)
Partially Automated	38(79.16)	11(73.33)	15(68.18)	01(11.11)	65(69.14)
Note: Figures in parentheses indicate percentage					
χ^2=16.601, df=03, P =0.00085363					

The Status of Library Automation in the libraries has been summarized in Table-VII. It can be seen from the table that 29 (30.85%) libraries are completely automated and 65 (69.14%) libraries are partially automated. The Table VII also presents that 10 (20.83%) Government colleges, followed by 04 (26.66%) Private Colleges, 07 (31.81%) Private Unaided Colleges and 08 (88.88%) Autonomous colleges are completely automated. About 38 (79.16%) Government colleges, followed by 11 (73.33%) Private Colleges, 15 (68.18%) Private Unaided Colleges and 01 (11.11%) Autonomous are partially automated.

The χ^2-test conducted for 03 d.f. at the 5% level of significance shows an association between the Status of Library Automation and the type of colleges (χ^2=16.601, p=0.00085363<0.05).

TABLE VIII REASONS FOR NON-AUTOMATION OF LIBRARIES

Reasons	Government (N=12)	Private Aided (N=04)	Private Unaided (N=25)	Total (N=41)
Inadequate finance	10(83.33)	03(75.00)	21(84.00)	34(82.92)
Lack of trained manpower	07(58.33)	02(50.00)	19(76.00)	28(68.29)
Lack of computer and ICT facilities	06(50.00)	00(00.00)	08(32.00)	14(34.14)
Management is not interested	03(25.00)	01(25.00)	13(52.00)	17(41.46)
Library collection is very less	09(75.00)	00(00.00)	06(24.00)	15(36.58)
Lack of Initiative	05(41.66)	01(25.00)	13(52.00)	19(46.34)
Note: Figures in parentheses indicate percentage and because of multiple-choice options the percentage is exceeded to more than 100%.				

The reasons for non-automation in the First Grade Colleges has been summarized in Table-VIII. The table depicts that 34 (82.92%) of librarians stated that 'Inadequate finance' as a reason for not automating the library, followed by 28 (68.29%) librarians opine 'Lack of trained manpower', 19 (46.34%) librarians opine 'Lack of Initiative', 17 (41.46%) gave the reason that the 'Management is not interested', 15 (36.58%) librarians opine that 'Library collection is very less' and 14 (34.14%) librarians opine that 'Lack of

computer and ICT facilities' as a reason for not automating the library.

The Table VIII also shows that 10 (83.33%) librarians of Government colleges, 03 (75.00%) librarians of Private Aided colleges and 21 (84.00%) librarians of Private Unaided colleges stated that 'Inadequate finance' as a reason for not automating their libraries.

TABLE IX METHOD FOLLOWED FOR BIBLIOGRAPHICAL DATA ENTRY/ CONVERSION

Method of Data Entry	Government (N=48)	Private Aided (N=15)	Private Unaided (N=22)	Autonomous (N=09)	Total (N=94)
Directly from books	27(56.25)	12(80.00)	14(63.63)	01(11.11)	54(57.44)
Preparing Data Entry Worksheet	16(33.33)	02(13.33)	04(18.18)	05(55.55)	27(28.72)
Transfer/ Import catalogue data	02(04.16)	01(06.66)	02(09.09)	01(11.11)	06(06.38)
All the above	03(06.25)	00(00.00)	02(09.09)	02(22.22)	07(07.44)
Note: Figures in parentheses indicate percentage					

The method followed for bibliographical data entry/conversion by the librarians has been summarized in Table IX. The table depicts that 54 (57.44%) librarians have done bibliographical data entry 'Directly from books', followed by 27 (28.72%) librarians have done bibliographical data entry by 'Preparing Data Entry Worksheet', 07 (07.344%) of librarians have done bibliographical data entry by following 'All the methods,' i.e., directly from books, Preparing Data Entry Worksheet, Transfer/ Import catalogue data.

About 06 (06.38%) of librarians have done bibliographical data entry by 'Transfer/ Import catalogue data' from other sources. The Table IX also presents that 27 (56.25%) of Government colleges, followed by 12 (80.00%) of Private Colleges and 14 (63.63%) of Private Unaided Colleges librarians have done bibliographical data entry 'Directly from books'. About 05 (55.55%) of Autonomous colleges librarians have done bibliographical data entry by 'Preparing Data Entry Worksheet'.

TABLE X OPINION ABOUT SUCCESS LEVEL OF THE LIBRARY AUTOMATION

Success Level of Automation	Government (N=48)	Private Aided (N=15)	Private Unaided (N=22)	Autonomous (N=09)	Total (N=94)
Very Successful	05(10.41)	06(40.00)	02(09.09)	03(33.33)	16(17.02)
Successful	06(12.50)	02(13.33)	01(04.54)	02(22.22)	11(11.70)
Partially Successful	18(37.50)	03(20.00)	06(27.27)	02(22.22)	29(30.85)
Needs improvements	03(06.25)	01(06.66)	01(04.54)	01(11.11)	06(06.38)
Needs data cleaning	16(33.33)	03(20.00)	12(54.54)	01(11.11)	32(34.04)
Note: Figures in parentheses indicate percentage					

The opinion about the success level of the library Automation in the First Grade College libraries has been summarized in Table X. It can be observed that 32 (34.04%) librarians stated that they need data cleaning, followed by 29 (30.85%) librarians who have opined that library automation is partially successful, 16 (17.02%) librarians have opined that library automation is very successful, 11 (11.70%) librarians have opined that library automation is successful and 06 (06.38%) librarians have opined that library automation needs improvements. The Table X also depicts that 18 (37.50%) Government college librarians have stated that library automation is partially successful, followed by 06 (40.00%) Private college librarians opined

that library automation is very Successful, 12 (54.54%) Private Unaided college librarians opined that library automation needs data cleaning and 03 (33.33%) of Autonomous college librarians opined that library automation was very successful.

VI. FINDINGS

1. A total of160 questionnaires were distributed and 135 filled-up questionnaires were received with a response rate of 84.37%

2. Out of the 74 (54.81%) colleges that are accredited by NAAC, 41(68.33%) are Government colleges, 18

(94.73%) are Private Aided colleges, 06 (12.76%) are Private Unaided colleges and 09 (100.00%) are Autonomous colleges.

3. Among 135 respondents, 78 (57.77%) are 'Male' librarians and the remaining 57 (42.22%) are 'Female.' As usual, there are more male librarians than female librarians.

4. There are 62 (45.92%) librarians having professional qualification as 'M.L.I.Sc.', followed by 47 (34.81%) librarians are having 'M.Phil.' degree and 26 (19.25%) librarians have a professional qualification as 'Ph.D.' degree.

5. A total of 54 (40.00%) librarians are having experience of '11-15' years as a Librarian, followed by 24 (17.77%) of librarians having experience of '1-5' years, 22 (16.29%) of librarians are having experience of '6-10' years, 15 (11.11%) of librarians are having experience of '16-20' years as a librarian.

6. With regards to the library automation, 48 (80.00%) 'Government' colleges, followed by 15 (79.94%) 'Private Colleges', 22 (46.80%) 'Private Unaided' Colleges and 09 (100.00%) are 'Autonomous' colleges librarians opine as 'Yes' towards library automation. It is highlighting to note that all autonomous colleges are automated.

7. While referring to the status of library automation, 29 (30.85%) librarians opine as 'Completely' automated and 65 (69.14%) librarians opine the status of library automation as 'Partially' automated. Among 'Completely' automated 10 (20.83%) are 'Government' colleges, followed by 04 (26.66%) are 'Private Colleges', 07 (31.81%) are 'Private Unaided' Colleges and 08 (88.88%) are 'Autonomous'.

8. A large majority of librarians 34 (82.92%) opine that 'Inadequate of finance' as a reason for not automating the library, followed by 28 (68.29%) opine as 'Lack of trained manpower', 19 (46.34%) opine as 'Lack of Initiative', 17 (41.46%) gave the reason that the 'Management is not interested,' for not automating the library.

9. Regarding opinion about success level of the Library Automation 32 (34.04%) librarians have opined as they 'Need data cleaning', followed by 29 (30.85%) of librarians have opined as 'Partially Successful', 16 (17.02%) of librarians have opined as 'Very Successful', 11 (11.70%) of librarians have opined as 'Successful' and 06 (06.38%) of librarians have opined level of library automation as they 'Needs improvements'.

VII. SUGGESTIONS

The partially automated college libraries must fully automate all the library automation software modules, as all the modules are interlinked in an integrated library management system. The correct use of the module automatically complements the activities of the subsequent modules in some way or other. The non-automated colleges can implement open source library management software to save a considerable amount of budget.

VIII. CONCLUSION

Adverting to the trend of creating digital libraries and automating libraries and information centers' functions, the management of the colleges has to give due priority and make adequate budgetary provision. Further, the library staff has to be deputed to undergo training and attend workshops organized on library automation and digital information services management. A thorough knowledge and skill relating to integrated library management software is also an essentiality for the library staff.

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