Evaluation of Integrated Library Automation Software in Libraries: A Comparative Study of SOUL, NewGenLib and Libsys

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Abstract

Study compares the usefulness and effectiveness features of Library Automation Software i.e. Software of Universities Libraries (SOUL), NewGenLib and Libsys. Discuss the importance of Management Information System (MIS) in decision making for library administration. Consolidated score of different features of selected software is enumerated and responses from participants are tabulated to compare the management features in different software. Ranking of software on the basis of availability of management features in the selected software has also been evaluated.

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1. Introduction

Since the early 1990s, the expansion digital collection and library automation has been the forefront of library issues. The libraries began to recognize the advent of digital resources as one of the most significant library developments of twentieth century. The dynamic social and technological environment has brought about revolutionary changes in the nature, form and services of the libraries. The advancement in the field of information communication technology (ICT) has compelled the libraries to adopt the automation facilities in traditional libraries to cope with demand of the users.

The history of library automation is dates back to the 1950s and 1960s in America and Europe. In the beginning, developing integrated software was very difficult task and hence, modular software was developed to deal with the acquisition, cataloguing, serial control, etc. and developers of library automation software gave more emphasis on automation of the library housekeeping operations, because that was considered chief requirement for library system. The first time computer was used in Indian library by the NISCAIR (formerly INSDOC) in 1965.

2. Literature review

Haravu, L J (2001) in his work Experiences in library automation and possible lesson for the future: a case study outlined the experiences gained in projects to automate the library and

Documentation Services of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), including the methodology and priorities in library automation, the rationale for various decisions taken and the mistakes that, in retrospect, would have been avoided. Rao, Nageshwara and Babu, Ramesh (2003) in his article Application of decision support system (DSS) in libraries with reference to training & development of manpower have discussed about origin, development and need for decision making in libraries as well as other organizations. Rao, Subba P V (2005) in Library and information technology focused on impact of new technology on every facet of information handling. He stated that the advent of digital computer has opened up new possibilities in information management, and it is likely to change the information infrastructure.

Hussain, Shabahat and Ansari, Metab Alam (2007) in their work have emphasized that computer in library has extremely enhanced the usefulness and effectiveness of library services. Stephen, T. & A. Lawrence, Mary. (2009) in their annual business review meeting with software developers in USA was of the view that the librarians are expecting to find everything together in the integrated library software. Suresh Babu (2010) in his paper discussed about the explosion of computer and communication technologies in libraries. He asserted that the libraries have been looking forward for better technologies even before the onset of computers. At present, the library professional are applying advanced technologies to enable their user community to get the right information at the right time. Sampath Kumar & Biradar (2010) have conducted a study on use of ICT in college libraries in Karnataka. The study examined the availability of ICT infrastructure, status of library automation, and barriers to implementation of library automation and also librarians' attitudes towards the use of ICT in 31 college libraries in Karnataka, India. The study found that lack of financial support, human resource, lack of training program for library staff were hindering the successful implantation of ICT in college libraries.

Mutula, Stephen (2012) in his study has presented the experience and lessons learned during the library automation project at the University of Botswana (UB). The case study revealed that because of the library automation, there was increased access in electronic resources, reduced physical space for storing and organizing information, introduction of new services, digitization of local content increased the access, and access to e-resources through remote sites was made possible through library automation. According to Deshpande, J. (2013) library automation is a generic term for information and communication technologies that are adapted to compliment or supersede manual systems in the library. The automation of libraries accrued many benefits such as easy and speedy access to online resources, accurate, and faster completion of library routine tasks. Mohammad, Jafar & Parvez (2014) have reviewed the impact of automation on library management services of four selected management institutes at Aligarh. The result highlights eighty five percent of the users were of the view that library automation system was better than manual system.

The advancement of technologies of communication and their uses transpired into web 3.0. Library 3.0 according to Bhattacharya, A. (2016) was a model for libraries using technologies such as the semantic web, cloud computing, mobile devices and re-envisioning our use of established technologies to make library collections accessible. This means that it is a library service engineered to use individual information search and use behaviour through technologies to design library services that are suited to individual needs. Takappa, R., and Ramakrishna, R. K. (2017) have studied that successively recommend funding, installation of LAN, stable power supply, provision of policy statement, and provision of bigger internet bandwidth among others, as the possible means to improve automated services in libraries.

Emasealu, H.U. and Umeozor, S. N. (2018) emphasized the emergence of technologies as the reason for which even more training and retraining is necessary for all concerned. The authors opined evidently, that the rate of decline in services in most libraries today, trickles down to limited investment in the training and developing of library personnel. Bajpai , V. K. and Madhusudan, M. (2019) has concluded that advancement of computer and internet has enabled libraries to provide both various electronic and ICT based information services. It has changed the way information is acquired, processed, organized, stored, retrieved, and disseminated. Matonkar, Prayangi V. and Kumar, Munesh (2021) during his research in Goa has found that professionals faced problem during the automation process due to inadequate training in ICT applications and lack of infrastructure and network facility in libraries. Apart from this he also came to the conclusion those professionals faced problem due to lack of interest for learning ICT application.

3. Objectives of the study

The present study was carried out with the following objectives:

- To evaluate the various features of library automation software including the managerial aspects of the software.
- To measure the effectiveness and usefulness of the different management features in the well-known library automation software in university libraries.
- To examine the problems faced by the librarian due to lack of managerial aspects in the various library automation software, if any, in their respective library automation.
- To find out whether the perception of usefulness and effectiveness of management features depends on the level of management and the level of qualification.

4. Scope and Limitations of the Study

The study of library automation software is mainly focused on management aspects of the library automation software namely: SOUL, Libsys, and NewGenLib which are currently being used by major libraries. Total 79 management features were identified and listed based on workflow of housekeeping operations and also data/information required by librarians in decision making. The management features were selected from various house-keeping operations in library such as acquisition, cataloguing, serial control, circulation maintenance, budgetary control features, and performance evaluation of staff and vendors. Data are indispensable. Therefore, if library administrators hope to provide strong support to the management from library software, it needs to possess the reporting features in library software to provide required data to the librarians. However, technical aspects related to design and development of library automation software has not been considered in the present study.

5. Research Methodology

The study covers library professionals from twelve academic institutions including universities and IITs who were actively involved with the library software in their day-to-day disposal of duties. There were 123 professionals working in the different libraries in 12 universities of which 105 were actively involved in the information handling through software in their respective libraries. Data collection was done by using structured questionnaire on Google form and distributed it digitally such as Whatts App, social media, e-mail and through personal visit to the institutions. The academic institution covered under

the study are North-Eastern Hill University, Mizoram University, University of Lucknow, Indian Maritime University, Osmania University, Jawaharlal Nehru Architecture and Fine Arts, University of Mysore, Tezpur University, Banaras Hindu University, B R Ambedkar University, Motilal Nehru National Institute of Technology, and Indian Institute of Technology, BHU.

All the 105 library professionals were questioned about the availability of management features in the library automation software they are using at present. The library professionals were requested to give their opinion on the usefulness and effectiveness of each of these features. These features are grouped under six modules i.e. acquisition, cataloguing, circulation serial control, database and OPAC with sub-group wherever essential.

6. Data Analysis and Interpretation

6.1 Consolidated Score of Features in Selected Software

The availability of listed essential management features in the three selected software is presented module-wise in the following table:

Table 1: Availability of Management Features in Three Selected Software

Module	Total	SOUL		NewGenLib		Libsys	
		Feature	%	Feature	%	Feature	%
Acquisition	20	16	80	14	70	12	60.0
Cataloguing	7	7	100.0	4	57.1	6	85.7
Circulation	27	19	70.4	21	77.8	24	88.8
Serial control	17	13	76.4	13	76.5	12	70.6
Database	7	6	85.7	5	71.4	5	71.4
OPAC	1	0	0.0	0	0.0	0	0.0
Total	**79**	**61**	**77.2**	**57**	**72.1**	**59**	**74.6**

The evaluation of respondents on usefulness of the listed management features on the three-point scale 'Good' , 'Moderate' and 'Poor' is presented below. 'Good' indicates most useful, 'Moderate' indicates the feature is useful moderately and 'Poor' indicates the feature is of least useful. The features were ranked based on the highest percentage of user responses rating a feature on the three point scale is considered. The number of features ranked on three-point scale is presented below. Thus, the data analysed and presented is rated to usefulness and effectiveness of the features pertaining to three selected software namely Libsys, NewGenLib and SOUL only.

Table 2: Usefulness of Features on Three-point Scale

Modules	Good	Moderate	Poor	Total
Acquisition	15	5	-	20
Cataloguing	7	-	-	7
Circulation	22	4	1	27
Serial Control	14	3	-	17
Database	6	1	-	7
OPAC	1	-	-	1
Total	**65(82.3%)**	**13(16.4%)**	**1(1.3%)**	**79**

6.2 Ranking of Usefulness of the Features

Acquisition: Out of the 20 features listed in the acquisition module 15 features were rated as 'Good' by majority of the respondents. The rate of the response ranges from 70.1% to 97.1% that means the lowest percentage of respondents rating the feature as `Good' is 70.1% and the highest percentage is 97.1% features. The rates of response were rated as 'Moderate' by respondents. The percentage of responses 69.6%, that means the least percentage of respondents 'Moderate' is 40.4% and the highest percentage is 69.6%. No feature in this module is rated as 'Poor'. The individual ranking of usefulness of each feature on three-point scale is presented in the following tables:

Table 3: Ranking of Usefulness of Different Features in Acquisition Module

Ranking of Usefulness of the Features					
S. No.	S. No. in list	Feature of Acquisition Module	Good	Moderate	Poor
1	1	No. of books ordered over a particular period	97.1	2.9	-
2	17	No. of orders processed by a Individual staff	89.3	6.7	4.0
3	19	No of Books passed on to Technical Section	89.1	7.8	3.1
4	2	No. of books received over a particular period	88.9	11.1	-
5	18	No. of books accessioned by a individual staff	88.5	4.9	6.6
6	6	Payment of bill amount over a period	87.6	12.4	-
7	11	Balance of expenditure on different Heads	83.5	13.4	3.1
8	10	Expenditure on different Heads	81.8	18.2	-
9	3	Reminders sent to vendors over a particular period	81.8	16.1	2.0
10	5	Total cost of books ordered/committed	80.7	19.3	-
11	4	Unsupplied title over a particular period	80.4	17.5	2.1
12	12	Total amount of bills pending over a period	79.4	16.5	4.1
13	8	Department-wise expenditure	78.4	20.3	1.3
14	7	Total cost of unsupplied books	75.0	19.4	5.6
15	9	Subject- wise expenditure	75.0	25.0	-
16	13	No. of items supplied within the stipulated period	47.6	**50.5**	1.9
17	16	No. of books supplied by against orders	36.4	**56.4**	7.3
18	20	Reports on gifts and complimentary books	35.1	**44.2**	20.8
19	15	Supply of material in good condition	33.3	**40.4**	26.3
20	14	No. of items supplied after the stipulated period	25.0	**69.6**	5.4

Cataloguing: Out of the 7 features listed in the cataloguing module all the 7 features were rated as 'Good' by highest percentage of the respondents. The rate of the response ranges from 49.0% to 91.0% that means the minimum percentage of respondents rating the feature as 'Good' is 49.0% and the highest percentage is 91.0%. No feature in this module is rated as 'Moderate' and 'Poor'.

Table 4: Ranking of Usefulness of Different Features in Cataloguing Module

Ranking of Usefulness of the Features					
S. No.	S. No in list	Features of Cataloguing Module	Good	Moderate	Poor
1	2	No. of Books catalogued over a period	91.0	9.0	-
2	1	No. of Books received from Acquisition Section over a period	89.7	10.3	-
3	5	No. of Books Passed on to the Maintenance Section	84.1	14.6	1.2

4	6	No. of books catalogued by a particular person	81.6	17.3	1.3
5	7	No. of books assigned bar codes by a particular person	66.2	28.4	5.4
6	4	No. of books unprocessed/ pending	60.0	31.6	8.4
7	3	No. of books assigned bar codes	49.0	45.8	5.2

Circulation: Out of the remaining 27 features 24 features were rated as 'Good' by the highest percentage of respondents the rate of the response ranges from 40.3% to 92.4% that means the least percentage of respondents rating the feature as 'Good' by 40.3% of the respondents, whereas the feature that is rated by highest percentage of respondents is 92.4%. There were 3 features rated as 'moderate' by the higher percentage of respondents. The percentage of response ranges from 40.6% to 58.4%, that means the least percentage of respondents rating the feature as 'Moderate' is 40.6% and the highest percentage is 58.4%.

Table 5: Ranking Usefulness of Different Features in Circulation Module

Ranking of Usefulness of the Features					
S. No.	S. No in list	Features of Circulation Module	Good	Moderate	Poor
1	1	No. of books issued over a particular period	88.5	11.5	-
2	2	No. of books returned over a particular period	83.5	13.4	3.1
3	19	Total number of members in the library	82.7	13.3	4.0
4	22	No. of PG students enrolled as members	82.5	16.5	1.0
5	20	No. of teaching staff enrolled as members	82.3	15.7	2.0
6	23	No. of UG students enrolled as members	81.3	17.7	1.0
7	16	Total number of books for reference	79.6	18.3	2.1
8	21	Report on total no. of research scholars enrolled as member	78.0	20.0	2.0
9	4	No. of books issued department-wise in a particular period	83.2	11.9	2.9
10	5	No. of books borrowed by teaching staff	80.2	16.5	3.3
11	3	No. of books issued subject-wise over a particular period	84.7	11.2	4.1
12	6	No. of books borrowed by research scholars	83.3	13.5	3.2
13	8	No. of Books borrowed by UG Students	83.7	13.3	3.0
14	15	Report on inter-library loan over a period	35.2	42.2	23.6
15	7	No. of books borrowed by PG students	83.0	14.0	3.0
16	24	No. of new registrations in an academic year	67.7	29.2	3.1
17	14	No. of books missing/ lost over a particular period	57.6	32.6	9.8
18	13	No. of books due after due date	57.0	39.0	4.0
19	11	Report on reminders sent over a period	52.6	45.2	2.2
20	12	No. of books received after reminders	53.2	41.7	5.1
21	9	Report on collection of library fee / deposit	83.5	13.4	3.1
22	27	User borrowing history	51.0	27.7	21.3
23	10	Report on amount collected an over dues over a period	44.0	**49.0**	7.0
24	25	No. of books damaged in the library	43.1	41.7	15.3
25	17	No. of books sent for Binding over a period	41.1	**54.7**	4.2
26	26	Report on status of damaged books	43.9	31.9	24.2
27	18	Total number of books returned from binding	38.2	**58.4**	3.4

Serial Control: Out of the 17 features listed in the serial control module 14 features were rated as 'Good' by highest percentage of the respondents. The rate of the response ranges from 47.5% to 95.3% that means the least percentage of respondents rating the feature as 'Good' is 47.5%, and the highest percentage is 95.3%.

The 3 features were rated as 'Moderate' by higher percentage of respondents. The percentage of responses ranges from 58.3% to 64.9% that means least percentage of respondents rating the feature as 'Moderate' i.e. 58.3% and highest percentage i.e. 64.9%. There was no feature in this module rated as 'Poor'.

Table 6: Ranking of Usefulness of Different Features in Serial Control Module

		Ranking of Usefulness of the Features			
S. No.	S. No in list	Features of Serial Control	Good	Moderate	Poor
1	1	No. of journals subscribed in a year	95.3	4.7	-
2	2	No. of foreign journals subscribed in a year	90.2	9.8	-
3	3	No. of Indian journals subscribed in a year	90.1	8.6	1.2
4	5	Amount paid for foreign periodicals	85.7	11.7	2.6
5	8	Report on total expenditure	84.8	12.0	3.2
6	4	Amount paid for Indian periodicals	82.9	14.6	2.5
7	9	Report on budget balance amount	78.6	16.3	5.1
8	14	Alerts on non-receipt of issues after Due Date	73.8	26.2	1.3
9	7	Amount paid for journals department-wise	70.1	27.3	2.6
10	6	Amount paid for journals Subject wise	67.9	28.2	3.8
11	13	List of missing non-receipt of missing issue	64.3	30.6	5.1
12	10	Items received within time	57.9	42.1	-
13	11	Items received after due date	49.5	45.3	5.2
14	12	Items received in good condition	56.7	32.6	10.8
15	16	No. of volumes received from binding	36.7	**63.1**	2.1
16	15	No. r of volumes sent for binding	34.3	**65.6**	-
17	17	Reports on expenditure on binding	27.4	**56.5**	16.7

Database: Out of the 7 features of database 6 features were rated as 'Good' by most respondents. The rate of the response ranges from 48.5% to 90.5% that means the least percentage of respondents rating a feature as Good is 48.5%, and the highest percentage is 90.5%. Only one feature rated as 'Moderate' by higher percentage of respondent's i.e 55.2%. No feature in this module is rated as 'Poor'.

Table 7: Ranking of Usefulness of Different Features in Database

		Ranking of Usefulness of the Features			
S. No.	S. No in list	Features of Database	Good	Moderate	Poor
1	1	Reports on backups made	90.5	7.9	1.6
2	2	Total number of records in database	87.2	12.8	-
3	3	Total Number of records language-wise	75.4	22.8	1.7
4	5	Total number of records-Theses	69.0	30.0	1.0
5	4	Total number of records-Monographs	67.4	31.5	1.1
6	6	Total number of records -Journals	48.5	47.4	4.1
7	7	Total number of records - manuscripts	36.8	**55.2**	8.0

OPAC: The only feature identified is 'User feedback from OPAC'. 86.4% of the SOUL users reported this feature as most useful and it is not available in the other two selected software.

Table 8: Ranking of the Usefulness Feature of OPAC Module

Ranking of Usefulness of the Features				
S. No in list	Features of OPAC	Good	Moderate	Poor
1	User feedback from OPAC	86.4	13.6	-

6.3 Ranking of Effectiveness of Features

The perception of respondents on effectiveness the listed management features on the three-point scale 'Most', 'Moderate' and 'Least' is presented in the table below. The features were ranked based on the highest percentage of user responses rating a feature on the three-point scale is considered. The number of features ranked on three-point scale is presented below.

Table 9: Effectiveness of Features on Three-Point Scale

Modules	Most	Moderate	Least	Total
Acquisition	15	5	-	20
Cataloguing	6	1	-	7
Circulation	20	6	1	27
Serial Control	13	4	-	17
Database	5	2	-	7
OPAC	1	-	-	1
Total	**60(75.9%)**	**18(22.8%)**	**1(1.3%)**	**79**

6.4 Availability of Effectiveness Features of Software in Different Module

In acquisition module: The study found that out of the 20 features listed in the acquisition module 16 features were rated as 'Most effective'. The percentage of features rated as 'Most effective' was ranging from 64.2% to 90.6% that means the lowest rated feature was stated as 'Most effective' by 64.2% of the respondents, whereas the feature that was rated as highest percentage of respondents were 90.6%.

In cataloguing module: Out of the 7 features listed under this module, 6 features were rated as 'Most effective'. The percentage of features rated as 'Most effective' is ranging from 60.8% to 85.4% that means the lowest rated feature was stated as 'Most effective' by 60.8% of the respondents and highest percentage was 85.4%. There was only one feature in this module was rated as 'Moderate effective' by 49.0% respondents. No feature in this module is rated as 'least effective'.

Table 10: Ranking Effectiveness of Different Features in Cataloguing Module

Ranking of Effectiveness of the Features					
S. No.	S. No in list	Features of Cataloguing Module	Most	Moderate	Least
1	2	Number of books catalogued over a period	85.4	12.4	2.2
2	1	Number of books received from acquisition section over a period	83.5	15.5	1.0
3	5	Number of books passed on to the maintenance section	78.0	22.0	-

4	6	Number of books catalogued by a particular person	76.3	22.4	1.3
5	4	Number of books unprocessed/ pending	61.0	30.5	8.4
6	7	Number of books assigned bar codes by a particular person	60.8	33.8	5.4
7	3	Number of books assigned bar codes	44.8	49.0	6.2

In circulation module, out of the remaining 27 features 21 features were rated as 'Most effective'. The percentage of the features rated as `Most effective' is ranging from 40.4% to 87.5% that means the lowest rated feature is stated as 'Most effective' by 40.4% of the respondents, whereas the feature that was rated as highest percentage of respondents was 87.5%. The six (6) features were rated as 'Moderate effective'.

In serial control, out of the 17 features listed, 12 features were rated as 'Most effective'. The percentage of features rated as 'Most effective' was ranging from 44.2% to 90.4% that means the lowest rated feature stated as, 'Most effective' by 44.2% of the respondents, whereas the feature that was rated as highest percentage of respondents was 90.4%. Further, 5 features were rated as 'Moderate effective'. The percentage of the features rated as 'Moderate effective' was ranging from 46.3% to 62.6% that means the lowest rated feature was stated as 'Moderate effective' by 46.3% of the respondents, whereas the feature that was rated as highest percentage of respondents was 62.6%. No feature in this module is rated as ' Least effective'.

Table 11: Ranking Effectiveness of Different Features in Serial Control Module

Ranking of Effectiveness of the Features
S. No.	S.No in list	Serial Control	Most	Moderate	Least
1	1	Number of journals subscribed in a year	90.4	9.6	-
2	3	Number of Indian journals subscribed in a year	85.2	12.3	1.3
3	2	Number of foreign journals subscribed in a year	84.1	15.9	-
4	5	Amount paid for foreign periodicals	80.5	16.9	2.6
5	8	Report on total expenditure	80.4	16.3	3.3
6	4	Amount paid for Indian periodicals	79.0	18.5	2.5
7	9	Report on balance amount in the budget	77.5	17.3	5.1
8	14	Alerts on non-receipt of issues after Due Date	72.6	26.2	1.2
9	6	Amount paid for journals subject-wise	67.9	28.2	3.8
10	7	Amount paid for journals department-wise	67.1	26.0	6.8
11	13	List of non-receipt/missing issues	61.2	32.7	6.1
12	10	Items received within time	48.4	**51.6**	-
13	12	Items received in good condition	53.0	37.4	9.6
14	11	Items received after due date	44.2	**46.3**	9.5
15	16	Number of volumes received from binding	35.6	**62.2**	2.2
16	15	Number of volumes sent for binding	35.4	**62.6**	2.0
17	17	Reports on expenditure on binding	30.6	**53.2**	16.7

Out of 7 features listed in **database module** queries 5 features were rated as 'Most effective'. The percentage of features rated as 'Most effective' is ranging from 63.0% to 84.1% that means the lowest rated feature is stated as 'Most effective' by 63.0% of the respondents, whereas the feature that was rated as highest percentage of respondents was 84.1%. Two

features are rated as 'Moderate effective' in this section. The percentage of the features rated as 'Moderate effective' is 53.6% and 60.9%. No feature in this module is rated as 'Poor'.

In OPAC the only feature identified was 'User feedback' from OPAC. About 80.3% of the SOUL users reported this feature as 'most effective'.

6.5 Ranking of the Selected Software

Considering the 79 management features that were identified as basic requirement and the availability of features relating to different modules in the three selected software packages under study, an attempt was made to rank the three software packages. Module-wise available features in each software package along with the number of features identified are presented in table 12.

Table 12: Ranking of the Software based on the Available Features

Feature	Number of features available			
	SOUL	NewGenLib	Libsys	Total Features
Acquisition	18 (Rank 1)	15 (Rank 2)	13 (Rank 3)	20
Cataloguing	6 (Rank 2)	3 (Rank 3)	7 (Rank 1)	7
Circulation	21 (Rank 3)	26 (Rank 1)	24 (Rank 2)	27
Serial Control	14 (Rank 1)	12 (Rank 3)	13 (Rank 2)	17
Database	7 (Rank 1)	5 (Rank 2)	5 (Rank 2)	7
OPAC/WEB OPAC	1 (Rank 1)	-	1 (Rank 1)	1
Total	67	61	63	79
Overall Ranking	**Rank 1**	**Rank 3**	**Rank 2**	

Depending on the availability of the overall 79 features, SOUL ranked 1st as it has identified 67 (84.8%) features and Libsys ranked 2nd with 63 (79.7%) features and NewGenLib was at rank 3 with 61 (77.2%) features.
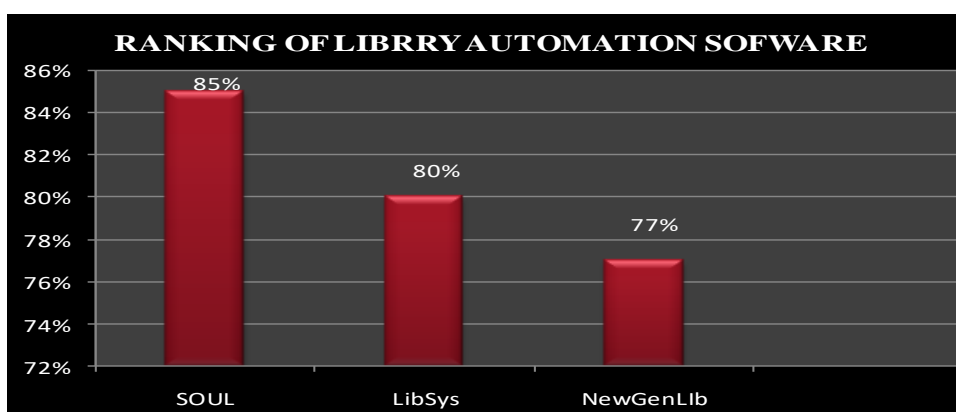
Figure 1: Ranking of Library Automation Software

7. Major findings

- Evaluation reveals the fact that 69 (61.6%) of the respondents had earlier used other software and 43 (39.4%) did not use any other software before using the present software on which they are working.

- Insufficient feature in the earlier software (43%) was the main reason to change over to the present software, followed by availability of advanced and updated version (24.4%), increasing cost of the software (15%) of the earlier software and not user friendly features (17.5%) in the previous software they used.

- Out of 79 features which were identified for evaluation of selected software for library management only 38 (48.1%) features were available in common in all the three selected software i. e. Libsys, NewGenLib, and SOUL.

- The remaining 41 features of the evaluation criteria is scattered in three selected software. Some features of the software are available in particular software, however, other features were available different software.

- Out of 79 features for evaluation of usefulness in the software 65 (82.3%) features were rated as 'Good' by the respondents. Further, 13 (16.4%) features were rated as 'Moderate' and only a single feature is reported as 'Poor' by the respondents. The usefulness of majority of the automation software is rated 'Good' by the professionals.

- As for as effectiveness features of the software was concerned, 60 (75.9%) features were rated as 'Most effective', 18 (22.8%) features were rated as 'moderate effective' and only one feature was rated as 'Least effective'. Majority of the features were rated as 'Most effective' by respondents.

8. Conclusion

With the information explosion together with the ever-changing needs and information-seeking behavior, the libraries face a number of challenges with regard to collection development, organization, services, personnel management such as job allocation and performance evaluation, etc., financial management, and so on. All these activities have direct implications on the functions of library management to be more efficient and effective. The libraries need continuous and effective planning and program for effective services to the user. Right decision-making at the right time is the need of the hour. To enable to make the right decision within the organization the library administration should be supported by the right data and information.

References

1. Bajpai, V. K., & Madhusudhan, M. (2019). ICT skills and competencies of library and information science professionals working in College Libraries, University of Delhi: A study. *Library Philosophy and Practice*, 2019.
2. Bhattacharya, A. (2016). Library 3.0 and its impact on modern library services. *International Journal of Next Generation Library and Technologies*, 2(1), 1-12.
3. Deshpande, J. (2013). Library automation in the academic institutions. *International Journal of Science and Research*, 4(3), 1500- 1501.
4. Jafar, Mohammad & Parvez, Ahmad (2014). Impact of automation on library services in selected management institutes at Aligarh: A survey. *The Electronic Library, 32* (3), 296-307.

5. Haravu, L. J. (2001). Experiences in library automation and possible lesson for the future: a case study. *Herald of Library Science, 40 (3-4).*

6. Husian, S. & Ansari, M.A. (2007). Library automation software packages in India: study of the cataloguing modules of Alice for Windows, Libsys and Virtua'. *Annals of Library and Information Studies,*54 (3), 146-151.

7. Kimber, Richard T. (1968). An introduction to computer based library Systems. Oxford: Pergamon Press, pp. 75-85.

8. Prasad, H. N. (2012). *Information needs and users*. (2nd ed.). Delhi. B. R. Publishing Corporation.

9. Sampath Kumar, B.T. & Biradar, B.S. (2010). Use of ICT in college libraries in Karnataka, India: a survey. *Program, 44* (3), 271-282.

10. Matonkar, Prayangi V. & Kumar, Munesh, "Study of Library Automation and Computing Skills of Library Professionals in Goa" (2021*). Library Philosophy and Practice* (e-journal). Practice (e-journal). https://digitalcommons.unl.edu/libphilprac/6140 retrieved on 24.10.2021.

11. Mutula, Stephen Mudogo (2012). Library automation in sub Saharan Africa: case study of the University of Botswana. *Program, 46* (3), 292-307. Available at: https://doi.org/10.1108/00330331211244832

12. Stephen, T. & A. Lawrence, Mary. (2009). Role of ICT in the Development of Libraries. '*International Conference on Knowledge Networking in ICT Era'* Chennai, pp. 180-183.

13. Suresh Babu, M (2010). Koha: an open source library automation system. In Ramaiah, L. S. and others (Eds.). *National Conference on Public Libraries in the Knowledge Societies*. Vijayawada: APLA.

14. Emasealu, H. U., and Umeozor, S. N. (2018). Exploring the features of social media to promote research activities. *Proceedings of the Informing Science and Information Technology Education Conference,* La Verne, California, 89-101. Santa Rosa, CA: Informing Science Institute. https://doi.org/10.28945/3991

15. Takappa, R., and Ramakrishna, R. K. (2017). Present status of library automation in polytechnic colleges in Karnataka State: A survey. *International Journal of Digital Library Services*, 7(2), 87-98.

16. https://www.inflibnet.ac.in/soul/downloads/SOUL2.0.pdf retrieved on 24.6.2018.

17. https://opensource.com/resources/what-open-source retrieved on 12.5.2017.

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