

VIABILITY OF ADOPTING OPEN SOURCE INTEGRATED LIBRARY SYSTEMS IN INDIAN LIBRARIES: PERSPECTIVES OF COMMERCIAL ILS USERS

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Abstract

Developments in software technologies are emerging and exciting and open source software is coming forth as mainstream option for technological applications in libraries. Adoption of open source integrated library system (OSILS) in Indian libraries is in the early phase. However they are full-blown and emerged to deal with different aspects of electronic and digital contents and enable libraries to gain more flexibility and freedom in managing and disseminating resources than commercial software with license restrictions. The paper examined the perceptions of commercial Integrated Library System (ILS) users on adopting Open Source Integrated Library System (OSILS) among the selected libraries in India. Study also identifies the major obstacles associated with the wider adoption of OSILS in India libraries. Analysis tried to identify the attitude of respondents towards the selected statements on pros and cons of adopting OSILS in Indian libraries in equivalence to its commercial counterpart. The result of the study found that eventhough commercial ILS users support adoption of OSILS in Indian libraries the rate of adoption among them is comparatively low as majority of the respondents are satisfied with their legacy commercial system. However it is also found from the study that entry of OSILS had a major impact on the market of proprietary software and increased the efficiency of the library services than ever although it creates more work for library staff in-terms of its local customization and maintenance which requires more technical expertise than proprietary software.

Keywords: ILS, Integrated library system, library automation, open source integrated library system, Open source software, OSILS, OSS, commercial ILS

INTRODUCTION

The term 'Open Source' becomes more popular among the Indian library professionals for the last few years due to its various technological applications. Any software which is licensed under an open source license and delivered with its source code can be called as open source software and such projects are depending on the work of volunteers. Software which are available in open source mode is gaining popularity among the Indian libraries as its application in automating house-keeping operations, creating institutional repositories and digital libraries, managing online contents, creating personal and library

web pages etc. have been highly recognized. Among them adopting or migrating to Open Source Integrated Library System (OSILS) is gaining immense importance in libraries as a cost effective solution to handle the activities of library and fulfill the requirements of the users effectively. Many libraries have either already migrated from their legacy commercial system or planning to adopt OSILS for automating their libraries and some are waiting for simulating the result of successful implementation of libraries being adopted. Cost effectiveness, freedom to customize on local needs, promotional activities from professionals and organizations etc. have highly influenced in enhancing the rate of adoption of OSILS in Indian libraries.

Whether it is open or proprietary an Integrated Library System (ILS) also called as Automated Library System, Library Automation Software, Library Management System etc. Acquisitions, Cataloguing, Circulation, Serials Management, Web interface of OPAC are the minimum modules to be prevailed in an ILS to perform standard functions. Selection of OSILS was very limited in the beginning when only few such open source solutions were available with no guarantee in its future existence. In the last decade remarkable changes happened in information sector and have brought promising attributes to the usage of open source software. Modern ILS also supports electronic and digital collections and provides ILL services, digital reference, materials booking, RFID and has options for accommodating library 2.0 tools and facilitate online and offline mode of circulation. Collaborative nature of development reduces the complexity and the presence of unnecessary features in the software. Adopting OSILS enable libraries confronting of budget limitations to find a technological solution and provide tremendous advantages to perform the entire house-keeping operations of the library. Considering the total number of libraries in India adopted OSILS with its commercial users, the value is insignificant. According to Randhawa, the migration of users from commercial software to OSILS in the recent years is steadily increasing which forces the commercial vendors to decrease their price to retain the existing customers (Randhawa, 2013).

OBJECTIVES

The main objective of the study is to examine the perception of library professionals using commercial ILS towards the adoption of open source ILS in Indian libraries. The other objectives are as follows,

- To examine the attitude of commercial ILS users towards the adoption of OSILS
- To analyze the challenges associated with the adoption of open source integrated library systems among commercial ILS users in Indian libraries
- To identify the perceptions of commercial ILS users towards the selected statements on adopting OSILS in Indian libraries
- To examine the possible solution to enhance the rate of adoption of OSILS among the commercial ILS users.

LITERATURE REVIEW

The paradigm shift of proprietary library software to OSILS is conspicuous in the Indian library community. Availability of basic modules is common in almost all ILS; however flexibility in adding or customizing the options according to library needs makes the

difference. Emergence of OSILS products changed the landscape of library activities and taking them into a new direction. Most of the OSILS developed under open source license which ensures the use of software is free for all the users and many libraries at national and international level have migrated to OSILS from its commercial legacy systems. Adoption of OSILS in libraries offers significant benefits compared to its commercial counterparts. Activities from individuals, associations and Governments are occurring to promote the awareness on adoption of OSILS in India. Frequently organized seminars, workshops, hands on training programs etc. have encouraged the professionals to use open source software. Some Universities have already included topic on open source software in their curriculum.

There have been many earlier studies which acknowledge the usefulness of OSILS. Hassan (2009) in his article explained, OSILS has a growing importance in Indian scenario. The OSILS have gained the flexibility to incorporate the standards and interoperability that an individual library needs. OSILS are the need of the time as the commercial vendors may walk out of business and librarian can continue to serve only if they are the owners of the software. According to Jackson, given the economic realities of our firms and institutions, librarians do need to consider technologies that may reduce the considerable cost associated with discovering and maintaining access to legal information. Free and open source software and systems and cloud-based initiatives may provide innovative approaches librarians should consider. (Jackson, 2011). Kumar and Reddy (2013) in their research article evaluated the features and functionalities of different OSILS to derive the best one and justified that in the recent years OSILS are gaining more importance due to their features and benefits. However there are many issues which restrict the wider adoption of OSILS among the Indian libraries. Adoption of open source library management system is restricted in India by the lack of awareness and knowledge in open source technology among library professionals (Vimal Kumar, 2011). Hanumappa et al (2014) conducted a study of existing library OSILS in India to find that there was a considerable interest among the Indian libraries to adopt or migrate to OSILS. Competencies in implementing, maintaining and servicing OSS and OSILS are to be acquired by LIS Professionals. Satpathy and Maharana suggest cooperative and participatory organizational system, positive attitude of authorities and LIS professionals, and proper training provision for LIS professionals for the widespread use of OSS in libraries (Satpathy and Maharana, 2012). In short, there is significant amount of cost involved in terms of time and effort to choose, implement, customize, updating and maintaining the software, both proprietary as well as open source.

METHODOLOGY

A structured online questionnaire was prepared by accommodating the details pertaining to the respondents profile and their library profile along with the questions on OSILS. Questionnaire was prepared in Google and the URL link of the survey was randomly sent together with a request letter for the participation to the libraries of universities, educational institutions and special or research libraries via e-mail. The respondents are selected among the professionals who using any of the commercial integrated library system. The feedback of 387 respondents who were involved in the exercise during the year 2014 was enumerated for the further study. The study surveyed 387 libraries of all types currently using proprietary ILS about their attitude towards the adoption of OSILS.

Out of the 387 respondents of the survey, majority of the respondents were from college libraries 46% (181), 27% (138) were from university libraries, 20% (106) were from special/research libraries, 2% (12) were from school libraries 2% (10) were from corporate libraries and Non-profit institute libraries.

PLAN TO ADOPT OSILS

Respondents indicated that they are aware of the availability and advantages of adopting OSILS in Indian libraries. 30% of respondents completely agreed that they had already planned to adopt OSILS and 6% were stated that they were in the process of migration. However the analysis shows that majority (64%) of the libraries surveyed was unwilling to change or switch over to OSILS (Fig.1)

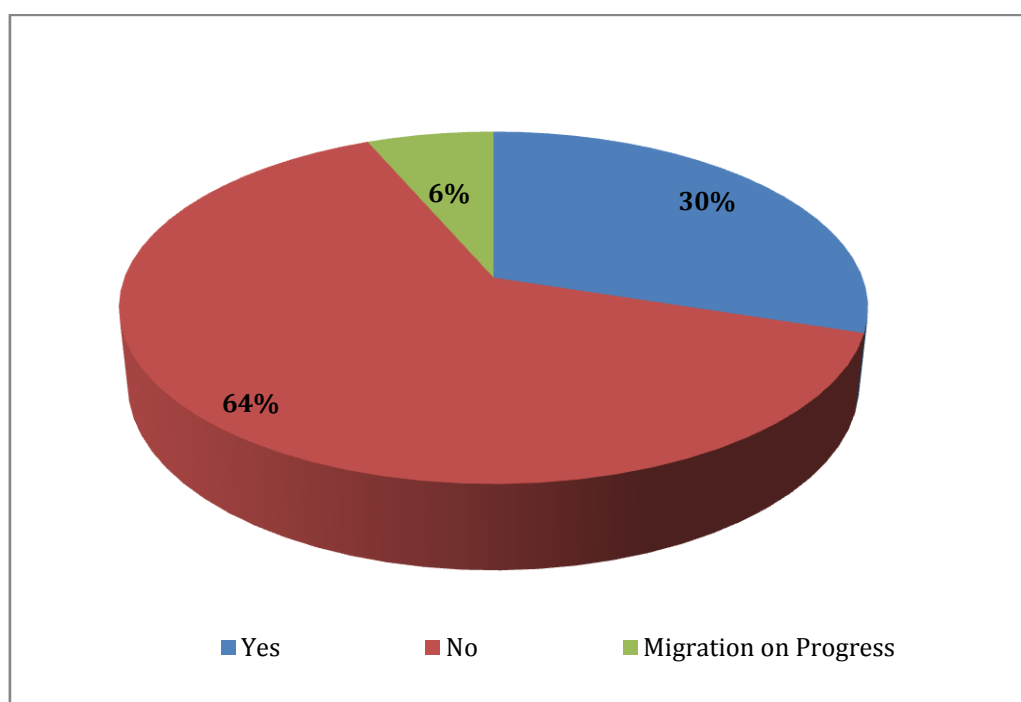


Fig. 1: Rate of response on OSILS adoption

WHY TO CHOOSE OSILS?

Adoption of OSILS offers a significant economic savings to the libraries. Efforts were made to find out the motivation behind the libraries considering an OSILS for their libraries among the respondents (36%) who had a positive approach. The result appears that cost effectiveness is the prime reason (18%) where as flexibility in using OSILS (15%), full control over the data and software (14%) and easy to customize for the local requirements (13%) were the other significant reasons respectively. Full control on the direction of development of the software and technical or community support were equally (10%) attracted the adoption of OSILS where as shrinking budget and pressure from the management, demand from users, vendor support and other reasons were comparatively insignificant and were represented as 8%, 5%, 4% and 3% respectively (Fig.2).

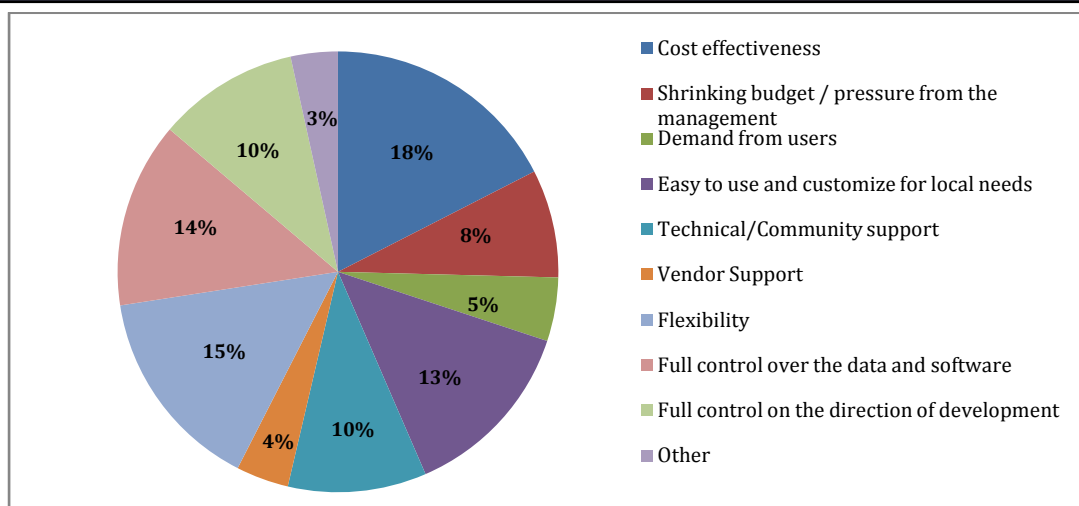


Fig. 2: Reasons for adopting OSILS

CHALLENGES IN ADOPTING OSILS

Commercial companies offering services on proprietary ILS were dominating in the library software market until the emergence of OSILS. There is a strong belief among the library professionals that the support extended as part of the licensing agreement by the commercial software vendors tends to be better than the mercy support of OSILS. Most of the libraries in India are accustomed to use their legacy commercial software and have fear about the success of OSILS which sometimes supported by the organizational policies to continue with the existing software. Many libraries were lacking quality integrated library systems due to its high purchase cost and licensing fees. OSILS are known for its reliability, collaborative and user focused mode of development with zero licensing fee approach. Many libraries in India were reluctant to adopt OSILS due to various reasons. Many of the libraries do not have an in-house technical expert who can handle the software for their requirements feel that open source is a risky alternative. Professionals being tech-savvy and are able to cope with the technological changes in libraries are always relevant and competitive. However there are cases of termination of supports, services, updates etc from commercial vendors also. Transition from major library automation product to open source ILS is a common phenomenon.

Respondents were invited to offer their responses why they still use commercial ILS by paying huge license fee with a restricted access to its source code. The most common reasons for not considering migration to OSILS was the satisfaction with their legacy commercial system. Other most common issues respondents cited were difficulties in maintenance, Lack of in-house technical expertise, Lack of motivation from the management / Organizational policies, Lack of support from vendors and community, Lack of sufficient manpower, Lack of reliability, Complex installation procedures, Lack of experience and training, Lack of commercial support, Lack of major functionalities, features or modules, Lack of knowledge in open source technology, Lack if IT infrastructure, Lack of exploring options for migration, Lack of proper documentation, Lack of adequate library collection, Other (Issues involved in data migration of different modules, there is no much difference in features and the functionalities and these libraries

are sound in budget also. Need more time to take decision based on other libraries experiences and self- learning through sample databases Fig. 3)

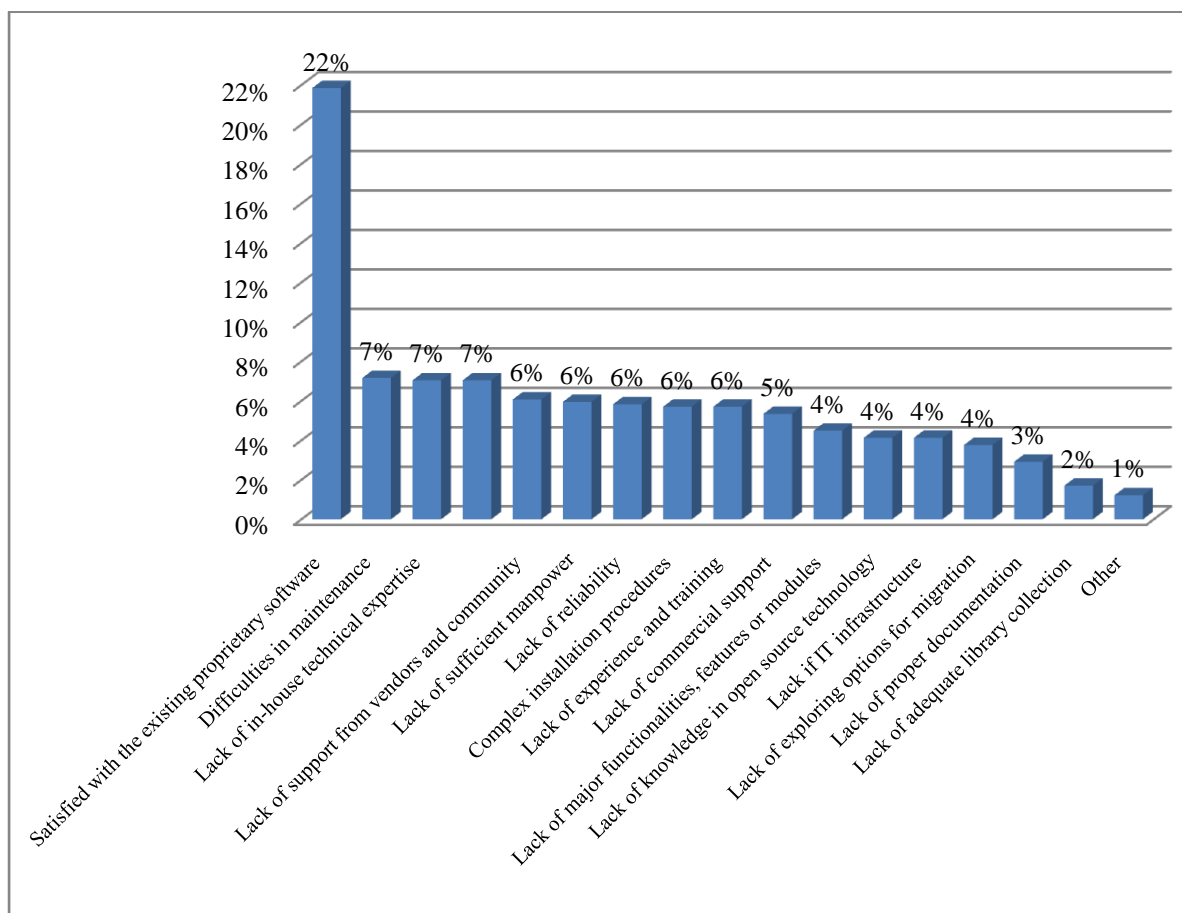


Fig. 3: Challenges in adopting OSILS

PERCEPTIONS OF COMMERCIAL ILS USERS ON OSILS

Respondents were asked to indicate their level of agreement with a set of statements and characteristics to determine the perceptions of them towards the adoption of OSILS in five point scale (Fig. 4).

1. OSILS requires more technical expertise than proprietary software

As OSILS requires strong technical knowledge to install the software, maintain the server and the systems, support of technical expertise is required for successful implementation and management. It is true that any ILS whether it is open source or proprietary requires a significant staffing commitment. The analysis for the statement, "OSILS requires more technical expertise than proprietary software" revealed that, 47% of the respondents agreed, 33% of the respondents strongly agreed, 11% of them had ambiguity, 7% of them disagreed, and remaining 2% strongly disagreed. It is clear from the responses that a higher number of respondents either agreed or strongly agreed that OSILS requires more technical expertise than commercial software and that would be the prime reason why the rate of adoption of OSILS is considerably low in Indian libraries. Implementation of

OSILS is made easy due to the availability of supports from other libraries, online communities and also from commercial vendors. However in order to customize the software for a specific need to fit to make it for their local requirement involve the support of expertise. Many Indian libraries lack professional with poor staffing structure.

2. OSILS are more expensive than anticipated

Respondents were asked to indicate whether the additional cost requirement in implementing OSILS is within in the range of their anticipation and majority (37%) revealed that they disagree with the statement “OSILS are more expensive than anticipated”. However while 27% of the respondents neither agree nor disagree with the statement 23% were agreed that it crosses their expectations in terms of economy. A few percentages (6%) were strongly agreed and disagreed with the statement. The result of the survey to measure the economic viability of OSILS during its implementation indicates that OSILS are within the expected financial limit and is economical. One fourth of the respondents had an experience of financial liabilities during its implementation than anticipated. However the overall responses shows that implementation of OSILS are not expensive than anticipated. The experience of University of Mysore in migrating to Koha software by an external service provider showed that the entire process of installation and configuration, migration of existing data, training, customization, hosting on cloud and Annual Maintenance Cost (AMC) cost them one third of the cost normally spend for a medium priced commercial ILS. By adopting out sourcing method and cloud hosting environment, the automation of a library can be easily done without spending much time and money. Moreover libraries can save much space for keeping the server and reduce the cost of air-conditioning and its maintenance for system administration. Needless to say, if the library has an expertise for installation, configuration and implementation, then the cost of running the software will be zero.

3. Exhaustive training is required for implementing OSILS

Inadequate training on implementation and maintenance is one of the main barriers in adoption and introduction of OSILS in Indian libraries. When prompted, one third of the respondent agreed with the statement “exhaustive training is required for implementing OSILS”. The distributions of the percentage of level agreements as strongly agree (30%), agree (46%), neither agree or disagree (13%), disagree (10%) and strongly disagree (2%). Hands-on and effective training for the customization and maintenance of OSILS should be provided to interested professionals. Attendance in workshops, seminars etc. enhance the knowledge of professionals on the advantages and possibilities of OSILS applications in libraries and to familiarize the library professionals with OSILS adoption and installation. National Library Automation and Resource Sharing Network (NLARN), which is funded and supported by the Ministry of Human Resources Development, Government of India under its National Mission for Education through ICT (NMEICT), National Institute of Science Communication and Information Resources (NISCAIR), New Delhi, Information and Library Network (INFLIBNET) Centre, Gandhinagar, and Delhi Library Network (DELNET), New Delhi etc frequently organizes awareness programs on OSILS.

4. OSILS lacks scalability

Provision for scalability or expandability is one of the important characteristics of an OSILS. The responses for the statement "OSILS lacks scalability" were mixed in nature where 8% strongly agreed, 34% agreed, 33% neither agreed or disagreed, 22% disagreed and 3% strongly disagree with the statement. However one third of the total respondents is agreed that OSILS are scalable solution to handle the load and can meet the needs of any kind of libraries

5. OSILS lack ability to meet current and future demands of the library

For the statement "OSILS lack ability to meet current and future demands of the library", 30% of the respondents agreed, 8% of the respondents strongly agreed, 23% of them had ambiguity and represented as neither agreed or disagreed, 33% of them disagreed, and remaining 6% of them strongly disagreed. However, the statement is not true as the higher majority of the respondents disagreed with the statements. Hence present OSILS solutions are capable to meet the current and future demands of any library.

6. OSILS has only fewer advanced features

On the whole, 26% of the respondents agreed, 8% of the respondents strongly agreed, 27% of them had ambiguity, 34% of them disagreed, and remaining 5% of them strongly disagreed for the statement "OSILS has only fewer advanced features". Equal number of respondents either agreed or disagreed with the statement, however as the OSILS products are developed over many years in a collaborative manner and are updating frequently can have more advanced and updated features

7. Entry of OSILS had a major effect on the proprietary ILS market?

When the statement "entry of OSILS had a major effect on the proprietary ILS market?" was prompted, the respondents replied in such a way that 12% strongly agree, 48% agree, 27% neither agree or disagree, 13% disagree and 1% strongly disagree. The usage rate of OSILS in Indian libraries indicates that majority of the libraries are interested in adoption OSILS. The entry of OSILS had a major effect on the proprietary ILS market due to its availability and supports in all levels of library operations like commercial software. Also library professionals can take part in the development and customization of the software according to their specific requirements.

8. OSILS increases the efficiency of the library services

When the statement "OSILS increases the efficiency of the library services" was analyzed, a higher majority (45%) was agreed and 15% of the respondents were strongly agreed with the impact of OSILS in increasing the efficiency of the library services. However the respondents were neither agreed nor disagreed disagreed and strongly disagreed at the rate of 32%, 8%, and 1% respectively. Libraries which have moved to open source ILS from commercial have found enhancements in the efficiency of their library services.

9. OSILS gives financial advantages as compared to commercial ILS?

OSILS is free in its availability of source code, but involve expenditures in system administration, maintenance, hardware requirement, staff training and facilities management etc. More than half (54%) of the total respondents agreed with the statement "OSILS gives financial advantages as compared to commercial ILS" apart from the strongly agreed response of 20%. Insignificant response rate of 6% and 1% were received as disagree and strongly disagree respectively for the statement where as 195 of the respondents were neither agreed or disagreed to it. As the large majority of the respondents agreed that OSILS are economically viable, hence it is, worth considering OSILS for libraries where financial aspect is an obstacle in bringing cutting edge technology to their information users

10. OSILS provides lower functionality than commercial software

When the statement "OSILS provides lower functionality than commercial software" prompted to know the functionality features of OSILS, 33% of the respondents were supported with the statement and 36% were not supported where as 30% of the total respondents were neither supported nor unsupported. OSILS provides all the functionalities that meet the needs of a particular library.

11. OSILS are less user-friendly than commercial ILS

Responses at the rate of 8% (strongly agreed), 24% (agreed), 30% (neither agreed or disagreed), 32% (disagreed) and 6% (strongly disagreed) were received for the statement "OSILS are less user-friendly than commercial ILS". It was well noticed from the analysis that OSILS are more user-friendly in its downloads, documentation facility and even its interfaces also and right from the installation all the functions at distinguished levels can be learned and performed by oneself without external help.

12. OSILS lack high quality documentations

Documentation is one of the major issues associated with the adoption of OSILS and availability of poor quality documentation discourages the OSILS as option of choice. The response rate of the statement "OSILS lack high quality documentations" was 8% strongly agree, 30% agree, 36% neither agree or disagree, 22% disagree and 4% strongly disagree. Availability of good quality documentation is also an essential requirement to the success of adoption of OSILS in libraries. The documentation available should be simple, easy to understand and helps professionals to adopt the software without third-party assistance. Documentation should explain the methods and requirements in step by step so that even a fresher should be able to complete the task without much effort. The responses rate of the respondents focused on the need for quality documentations.

13. OSILS create more work for library staff in terms of customization and maintenance

Respondents of the survey were asked to indicate their level of agreement with the statement "OSILS create more work for library staff in-terms of customization and

maintenance". When prompted, majority of the respondents strongly agree (14%) or agree (36%) that in-terms of its customization and maintenance OSILS create more work however significant number of respondents (28%) were neither agree or disagree with the statement but 18% of the total respondents disagreed with the statement. Response rate of strongly disagreed respondents were insignificant (4%)

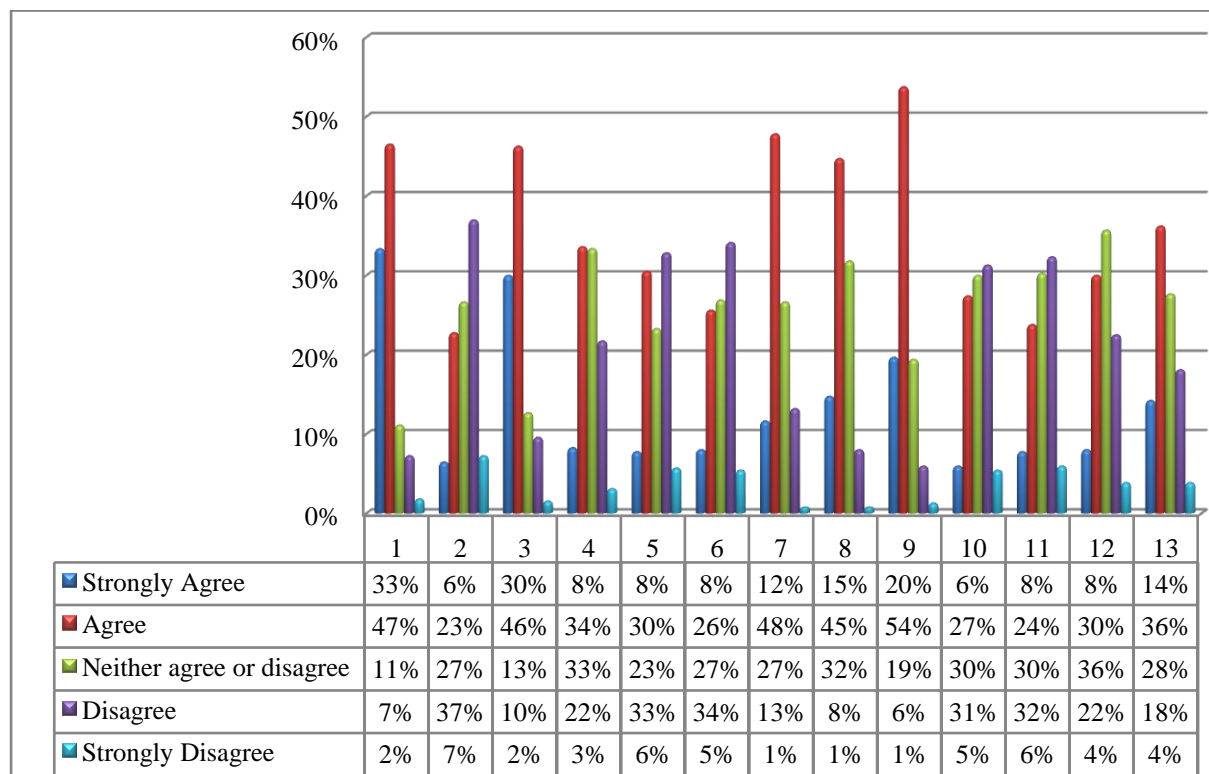


Fig. 5: Respondents level of agreement with OSILS statements

DISCUSSION

Major findings

It is found from the study that the attitude of the commercial software users on adoption of OSILS is favorable. Major findings of the study are as follows.

- It is clear from majority of the statements that library professionals using commercial software are highly support the adoption of OSILS
- Higher majority of the respondents of commercial users’ completely agreed that application of OSILS requires more technical expertise than proprietary software and to implement it exhaustive training is also needed.
- More than 60% of the commercial ILS users supported that entry of OSILS had a major impact on the market of proprietary software and also increases the efficiency of the library services than ever.

- Majority of the commercial ILS users agreed that compared to the software they were using, OSILS gives financial advantages though it creates more work for library staff in-terms of its local customization and maintenance
- Majority of the respondents are in dilemma on issues such as its scalability, efficiency to enhance the services of the library, quality documentations, functionalities and user friendliness in comparison with the commercial ILS.
- A higher majority of the commercial ILS users never agreed with the negatively charged statements such as expensive, inability to meet current and future demands of the library, fewer advanced features and lower functionalities

Possible solution to enhance the rate of adoption of OSILS

Although many institutional libraries started espousing OSILS for automation and integrated services, majority of the libraries in India are still continuing with proprietary software which consume major portion of their budget. There are many advantages that make libraries to experiment with OSILS (Gireesh Kumar and Jayapradeep, 2015). The study found while addressing the above statements that many respondents felt uncomfortable or lack confidence in adopting OSILS for their libraries due to either lack of knowledge in OSILS or an uncertainty in the statement related to OSILS. Libraries should have more technical expertise to handle OSILS. So that the additional cost associated with the implementation of OSILS can be reduced through internal expertise. Attendance in seminars, workshops and hands on training programs etc. enable the professionals to enhance their knowledge on OSILS. Informal training program to other professional can be extended within the library. Skills based and practice oriented courses also should be extended at the student level. The software is more viable in terms of its scalability as the expandability is rich.

CONCLUSION

Open Source Integrated Library Systems have opened opportunities for librarians to provide innovative approaches and services to their clients. The survey shows that higher majority of the respondents were aware of OSILS and many of them are working on it, which shows the popularity of OSILS among the library professionals. Many libraries have already changed their legacy commercial system to OSILS and many are there in the verge of adoption. The survey shows that high majority of the respondents were aware of OSILS and many of them are working on it, which shows the popularity of OSILS among the library professionals. Financial benefits, openness to customize, collaborative networking, freedom from maintenance and licensing fee, contributions from user community, vendor lock-in etc. are the major reasons why commercial software users support adoption of OSILS. However as majority of them is working with the software for a longer period hence satisfied with their legacy commercial software. Difficulties in maintaining OSILS, lack of in-house technical expertise and major functionalities, features, modules, support from vendors and community, commercial support etc. have also prevented them in adopting OSILS.

Openness of the source code is an opportunity for library professionals to be more proactive in experiencing the automation functions. Open source movement is a social movement which reduces the digital and technological divides and is increasingly being

used in Indian libraries. Despite some concerns about the viability of the OSILS, the current level of OSILS satisfaction is not entirely negative. Also adoption of OSILS highly reduced monopoly of commercial ILS companies and corporates. Professional's interest on self-learning the installation and maintenance of OSILS also reduces the commercial involvement. Emergence of OSILS made a high impact on libraries especially those libraries having inadequate financial support and more libraries are jumping onto the cost effective solutions. Adopting Open source software is a way to improve the technical skills of a librarian. Nowadays they have more choice to OSILS and have plenty in local expertise for adaptation and development. Most of the OSILS are mature now and able to meet the requirement of any kind of libraries. Selection of any ILS should support the mission of the library. Motivation to adopt OSILS in libraries need to be enhanced. The license fee for commercial ILS is manageable by libraries now as they don't have much financial burdens, however the other cost associated with other activities of the library may lead to reduce the expenditure on ILS. So it is advisable to think of an OSILS to overcome the challenges and embrace new ways of managing and retrieving resource and providing services through it.

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