



A Study on Library Automation Services and Satisfaction Among Users Towards Library Automation Services

Sonali Malhotra, Research Scholar, Department of Library Science,
Banasthali Vidyapith, Vanasthali, Rajasthan, INDIA

ORIGINAL ARTICLE



Corresponding Author

Sonali Malhotra, Research Scholar,
Department of Library Science,
Banasthali Vidyapith, Vanasthali,
Rajasthan, INDIA

shodhsamagam1@gmail.com

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A Study On Library Automation Services And Satisfaction Among Users Towards Library Automation Services ABSTRACT: The study was conducted to measure the satisfaction level of the library users towards the Satisfaction of library users was measured towards the library resources, library facilities, library services, and library automation services. The study was based on the primary data collected from library users from selected sixteen educational institutes of Himachal Pradesh.

ABSTRACT

The study was conducted to measure the satisfaction level of the library users towards the library resources, library facilities, library services, and library automation services. The study was based on the primary data collected from library users from selected sixteen educational institutes of Himachal Pradesh. These institutes include the central university of Himachal Pradesh, private universities, state government universities, and central funded technical institutes. Total 720 library users were taken in the sample for final data analysis. Data was analyzed using SPSS 20.0 version and MS excel. The library users were found to be satisfied with the library resources, but the satisfaction level of library users towards the library resources varies among different types of educational institutes.

KEYWORDS

Library automation, library services, Library users, Satisfaction, Himachal Pradesh, Resources.

INTRODUCTION

The term automation is derived from the Greek word: 'automose' which means to act without guidance spontaneously or self-movement. It was first used by D.S. Harder in the year 1936 (Das and Chatterjee, 2015). The Encyclopaedia of Library and Science provides a comprehensive definition of automation: "...process which involves designing and developing process and system that eventually reduce the requirement of human intervention..." (Kent, 1977). Drawing from this definition, library automation may be defined as the process that involves using technology for acquiring, dissemination

controlling, cataloguing, referencing as well as serials controlling of library resources (Boetang et al. 2014). Many of the tasks related to LIS are quite repetitive for example, referencing or acquisition of information. In such cases, ICT services have quite meticulously solved the issues and revolutionized the way of obtaining masses of data and intelligence.

According to **Kent** (1977), library automation should not be confused with other types of acquiring and processing information like automatic indexing, contextual analysis, etc. It is most definitely services of the library that are no longer performed through the traditional means. Jayaprakash and Balsubramani (2011) have pointed out that automation and computerization of library services initially gained momentum for housekeeping services that essentially make up the foundation for smooth- running advanced operations. Another definition is given by **Cohn** et al. (1992) states that library automation is "... referred as 'integrated systems' that use a common database to computerize a huge array of time-honored library functions..."

It has been stated by **Rao** in the year 1995, that based on the type of library – the housekeeping activities might be prioritized differentially. In a public library, the importance would be given to the extent of control over the circulation of the resources. On the other hand, serials controls might find precedence in the case of a special library. Some researchers have advocated for the importance of cataloguing in the library while others have opined that circulation control would be the first and the most straight forward operation for automation with regards to services of the library (**Boetang** et al. 2014). A third definition has been given by **Ritz** in the year 2004 that states the process of library automation as using systems of integrated computers to achieve certain long-established manual functions of libraries "...to include the core functions of acquisition, cataloguing and authority control, serials control, circulation, and inventory, and inter-library loan and document delivery." The library itself doesn't need to be automated, but only its certain functions and operations are.

The need for computerizing library resources was recognized in 1991 in India. Initially, it was only through the print medium that resources were gathered. Slowly, card catalogues started being replaced by Open Public Access Catalogues or OPACs. OPACs witnessed a great success that spearheaded the movement of inventing and creating library automation software like FoxPro and dBase. As masses started accepting them widely, library automation has become quite common in the Indian context, **Panda** (2013).

Library automation is an important phenomenon for the distribution of information over a wider range of audiences to make information more readily and globally accessible. Markuson defines library automation as the process of employing machines for processes associated with the library. Life automation represents a self-learning format that can be quite useful to release the workload of librarians. It also promotes diversification of information and resources kept in the library which makes the experience of obtaining information better (**Kumar**, 2019).

There has been a lot of development since the last centuries; Reforms and new technologies in our world which played an essential role in our lives. Many new types of research are going on in all countries and they are adopting and applying new techniques from these researches and have given exposure to their countries as well as others. Technology plays an important role in every field and now, libraries have become knowledge and information centers and give current information about technology, current trends, research, etc. The landscape of libraries in India has also changed due to the rapid development of ICT. Numerous libraries are using the latest ICT tools and providing the best services to their users. But on the other hand, many libraries are still operating traditionally. Most libraries in Himachal Pradesh are using the traditional way to provide library services to their users, and most of the librarians are not aware of the current trends. Most of the private universities are adopting new technology. In addition, many library management software (LMS) such as commercial

software, open-source software, and own developed software is available. If a library plans for automation then it becomes necessary to evaluate the available software which will meet its requirement properly.

Now, Himachal Pradesh has a huge number of higher education institutions where IIT, IIM, NIT and so many government and private universities have been established which are providing quality education in different streams, therefore, it becomes necessary to evaluate the status of libraries in all manners. Automation is an essential part to be a modernized library, so there is a need to analyse the status of library automation which will be beneficial to evaluate the existing library automation services and can also help in the adoption of policies for library automation in Himachal Pradesh educational libraries. The library is quite literally one of the critical services required by a diverse range of industries. Almost no industry can function without adequate and in-depth research into the specific field. The information required by academicians, educators, students, and industries comes most of the time from libraries. However, using physical libraries can sometimes become impossible. Library services can be quite tedious. They require an enormous amount of data to be acquired, organized, and processed. Moreover, the documents are required to be kept in proper shape and condition to assure that they are long-lasting. Patience is required to keep a track record of the documents that are borrowed. All these services can be quite expensive and labor-intensive. On top of that, libraries all over the world that have manual services continue to be heavily understaffed. Thus, libraries have always shown the need for automation.

REVIEW OF LITERATURE

Library Automation

Pratap (2019) focused on the present status of automation in the library of agricultural universities, problems while implementing library software in libraries, the impact of ICT applications in libraries, users' satisfaction towards the library software, and satisfaction using online resources available in the library. The study showed that all the agricultural universities' libraries were successfully implemented open sources software KOHA, and all three libraries were fully automated. The users were fully satisfied with library software and services provided by the libraries in all the three selected universities. **Dhabhai, Shikha** (2018) conducted a study to define the present status of automation in National law Universities of India. All the selected NLU libraries were providing e-services to their users. **Rajendran and Senthil** (2018) focused on the library automation, software packages, and implementation of Radio Frequency Identification technology in the college libraries affiliated with Bharathiar University (Coimbatore). The automated library services were categorized by ranking and the study showed that circulation service was given the first rank, followed by cataloguing service, CAS services, clipping services, and reference service was assigned the fifth rank. **Aneesh, Jayakrishnan and Joseph** (2018) conducted a study on library automation and information retrieval through OPAC from the perspective of St. John's College, Kerala. The study highlighted the moderate level of users' satisfaction towards OPAC search, and they were facing huge problems in searching OPAC. **Mohanata and Pandey** (2017) conducted a study on library automation and found that IIT Roorkee is providing better services and user awareness when compared to other libraries of Uttarakhand. But in Delhi, most of the school, college, and university libraries were fully automated and aware of the new services, and facilities. The study showed that there should be a need of creating an awareness programme about library automation for the users. Lack of internet facilities was also found in many libraries. **Pandya and Darbar** (2017) discussed the advantages and disadvantages of library automation among academic library users. Results revealed that the majority of the users were satisfied with the quick access and perceived the automation good as they can check the availability of resources from anywhere. **Ansari, Gautam and Shahwar** (2017) discussed the issues and challenges in Indian central universities towards library automation. The result showed that most of the libraries were fully automated with LibSys

software, and two central university libraries were automated with Koha and Trodden. All libraries have started their housekeeping operations with their respective software. It has been observed that library staff members, as well as the users were satisfied with the automated services such as OPAC search, and circulation services. Library automation has created more confidence among users to survive in the high-tech environment era. **Buragohain** (2017) conducted a study on public libraries of selected four districts Sivasagar, Golaghat, Dibrugarh, and Jorhat district in Assam. The study showed that in Assam, public libraries were not automated due to lack of knowledge about library automation, inability to implement the library software, lack of skilled staff, and lack of financial support for public libraries. There were few challenges faced by the public libraries. Public libraries were not using barcode technology, have lack of ICT infrastructure, slow speed of internet, and lack of hardware facilities. There were some suggestions given by the investigator that there should be some financial support from RRRRLF to implement the Koha software fully in the public libraries for better services in the future.

Users' Perception towards Library Automation

Venkatesha and Sarasvathy (2018) carried out a comparative study on library automation, user satisfaction with the OPAC services in Karnataka and Tamil Nadu state. The study revealed that the majority of users were aware of OPAC and were accessing OPAC in Mangalore University Library, Karnataka, and Annamalai University library, Tamil Nadu. Out of the 3 university libraries of Karnataka, the majority of the users were using OPAC on daily basis, and the same as Annamalai University library. Mysore University library and Annamalai University library users were highly aware of the advanced search options. Lack of orientation programme was found to be the main barrier to learn the current facilities available in the libraries in Karnataka and Tamil Nadu. Only a few users were aware of the ICT facilities and OPAC service. **Pandya and Darbar** (2016) surveyed users' perceptions of library automation. The results showed that students, research scholars, and faculty members were aware of automation. Users were familiarized with Soul software, LibSys, and with other library management software. Users were not satisfied with the power failure, were dissatisfied with the lack of computers, untrained library staff, and demanded the users' orientation programme frequently to understand the new modern technology. Most of the library staff appreciated the library automation because it enhanced their knowledge, skills, and also increased their working capacity with the ICT (Information and Communication Technology). **Alharbi and Awadh** (2016) discussed the users' perceptions about ICT in the American University Library in Kuwait. E-resources and e-books were available in the library, but due to lack of awareness regarding the facilities; researchers have recommended users' orientation programme to be conducted. **Naik, Devendra and Nikam, Khaiser** (2014) carried out a study on the law university library and also highlighted the benefits and use of web OPAC in Karnataka state. Maximum users have given a positive response towards the OPAC search in Karnataka. There should be a user's orientation programme regarding the OPAC search and other current facilities and services should be discussed. **Ansah, Mprah and Kumah** (2014) carried out a study on the influence of library automation on the job satisfaction of library personnel of the University of education of Winneba in Ghana. The researchers find that all housekeeping operations were automated in the University. It enhanced the working skill of library professionals and also provides a better platform to work with an automated environment. **Vimal Kumar and Jaisimudeen** (2012) conducted a study on implementation and users' attitudes toward Koha software in India. The satisfaction level of the users showed that they were fully satisfied with the services of Koha. **Ossai-Ugbah** (2010) conducted a study on automated library services and usage on academic performance in Nigerian Universities. Users who were accessing the facilities of library automation were aware of library automation and significantly better than those users who were not using it. Information communication technology provides a better platform in Nigerian Universities, but there is a need for improvement in

library services in the future. There should be more computers, a high speed of connection with the proper sitting arrangement in the libraries, and orientation programmes to know the facilities and services of the library for better development. The study also showed that some software is very expensive and some universities do not adopt the software due to lack of funds, lack of awareness, lack of library staff, and lack of ICT infrastructure.

ICT In Libraries

Mahanta (2019) carried out a study on ICT facilities, infrastructure, and services of college libraries of Assam. The study revealed that there was a positive impact of ICT in Assam college libraries. Most of the libraries were satisfied with the infrastructure facility and the users were satisfied with the availability of hardware and software provided by the college. In Assam, the majority of the colleges were providing internet, good library services, and barcoding facilities to their users. **Madu, Vandi and Chagwa** (2018) carried out a case study on the availability and use of ICT for information access in the Maiduguri University library in Nigeria. The major findings of the study showed that there are good ICT facilities are available in the Ramat library; but lack of awareness, lack of interest, poor connectivity were major problems that create hindrance between the library staff and students to learn ICT applications. **Dzandza and Emefa** (2017) conducted a study on ICT services to students as well as public library users in the Greater Accra of Ghana. The result showed that these types of opportunities to learn ICT technology are beneficial for the development of the country especially for the better future of public libraries. The authority supported the library staff to enhance their technical skills and promote them to learn new techniques. **Mathura Jothi** (2017) conducted an empirical study based on the awareness and knowledge of ICT application among women librarians in Tamil Nadu. The researcher observed that lack of ICT infrastructure facility, lack of support from administration, and lack of motivation towards ICT applications, were the major factors that affect the implementation and updating of new technology. **Panda and Singh** (2016) described the impact of information communication technology on library automation, especially in higher education. The study highlighted that library automation is essential for library staff, avoids duplication of work, and helpful in sharing resources with other libraries. But some institutions were facing problems to adopt automation and digitization due to lack of pedagogic training, lack of funding, lack of electronic resources, lack of experience of librarians, and lack of library staff. Still, these libraries were in process of adopting ICT tools and technology to provide a better digital platform to their users in the future. **Kumar, K** (2015) surveyed engineering colleges in the Rayalaseema area of Andhra Pradesh. The result showed that libraries were using Pentium IV processors and 85.19 percent were using the printer facility. Some institutions were provided the traditional as well as electronic and document delivery services. Libraries have also provided internet facilities to their users. Many engineering institutions have a lack of funding, lack of support from the institution to adopt library automation in the library. Some libraries were using their software for automation and some partially automated have taken the initiative of the digital library.

In India, very few studies have been conducted on library automation, and if conducted so then a blend of private, central, state universities and the institute of national importance all together have not been taken to compare library automation in different types of organizations. The satisfaction level of different types of users such as; faculty, research scholars, undergraduate students, and post-graduate students, towards library automation has been less explored in the literature. Satisfaction level of library users towards the library services, facilities, automation services, and opening hours altogether in one study has not been studied, which may give an insight detail about the overall satisfaction of library users.

Objective

To determine the satisfaction level of library professionals and users towards library automation.

Research Methodology

The focus of the research was to study the perceptions of users and librarians towards the library automation system in selected libraries of Himachal Pradesh. The study was descriptive and purposive. Data was collected from the users & librarians of Himachal Pradesh from the seven districts where different categories of users were selected for the study. A survey was conducted from December 2020 to March 2021 and data was collected from the users personally by visiting the Universities & Institutes. Reliability was required to be tested before finalizing the questionnaires as these were customized in nature as per the research objective and intended to be tested on a specific population of a specific geographical area.

Table 1: Reliability of questionnaire for library users

Description	Alpha value	Reliability	Number of responses
Complete questionnaire	0.862	High	30

The sample was taken of 30 library users accepting making use of library resources from Shimla, in personal mode. The reliability of the complete instruments consisting Likert scale was measured and found to be reliable as well as acceptable for the final data collection.

Hypothesis

Following is the list of the null hypothesis framed in the current study, and tested using various statistical tools for acceptance or rejection of the same:

Users' Satisfaction with library resources

- H₀₁** Satisfaction level of library users towards the library resources varies among different types of educational institutes.
- H₀₂** Satisfaction level of library users towards the library resources varies among different types of users.
- H₀₃** Satisfaction level of library users towards the library resources varies among different age groups.
- H₀₄** Satisfaction level of library users towards the library resources varies among users based on their frequency of visit to the library.

Users Satisfaction with Library Facilities

- H₀₅** Satisfaction level of library users towards the library facilities varies among different types of educational institutes.
- H₀₆** Satisfaction level of library users towards the library facilities varies among different types of users.
- H₀₇** Satisfaction level of library users towards the library facilities varies among users based on their frequency of visit to the library.
- H₀₈** Satisfaction level of library users towards the library facilities varies among users based on their frequency of visit to the library.

Users Satisfaction with Library Services

- H₀₉** Satisfaction level of library users towards the library services varies among different types of educational institutes.
- H₁₀** Satisfaction level of library users towards the library services varies among different age groups.
- H₁₁** Satisfaction level of library users towards the library services varies among different types of users.
- H₁₂** Satisfaction level of library users towards the library services varies among users based on their frequency of visit to the library.

Users Satisfaction with Library Automation Services

- H₁₃** Satisfaction level of library users towards the library automation services varies among different types of educational institutes.
- H₁₄** Satisfaction level of library users towards the library automation services varies among different age groups.
- H₁₅** Satisfaction level of library users towards the library automation services varies among different types of users.
- H₁₆** Satisfaction level of library users towards the library automation services varies among users based on their frequency of visit to the library.

Results and Discussions

This section depicts the results of analysis of data collected from the 720 library users from four types of educational institutes namely; private universities, central universities, central funded technical institutes, and the state universities operating in Himachal Pradesh.

Profile of the library users related to their age group, type of users, type of organizations, and the frequency of visit to the library by these users showed that 26.5 percent library users were from age group of 26 to 30 years age group, followed by 25 percent library users from age group of below 20 years. Only 11.8 percent library users were from an age group of above 35 years. Overall, the library users were from age group of below 20 and 26 to 30 years. 28.6 percent library users were undergraduate students, followed by 28.2 percent library users from post graduate courses. Only 15.8 percent library users were research scholars, and 19 percent were faculty members. 8.3 percent library users were from admin staff and non-teaching staff. Overall, the library users were students pursuing undergraduate and post graduate courses in the selected educational institutes of the Himachal Pradesh. 42.5 percent library users were those who visit the library on daily basis, followed by library users who visit the library fortnightly or once in a week. Only 8.8 percent library users were those who visit the library twice in a week. 14.2 percent library users were those who visit the library rarely. Overall, the library users were students visiting library on daily basis in the selected educational institutes of the Himachal Pradesh. 47.5 percent library users were from private universities, followed by 25.4 percent library users were from state universities. 20.8 percent library users from central funded technical institutes and only 6.3 percent library users were from central universities in the sample of library users from selected educational institutes of the Himachal Pradesh. Overall, the library users were students from private universities of the Himachal Pradesh.

Satisfaction of library users was measured towards the library resources, library facilities, library services, library automation services and the library opening hours using the descriptive analysis, and one-way Anova method. The satisfaction of library users from four different type of educational institutions towards the library resources such as; text books, general books, journals, e-books etc, was measured using three-point scale; fully satisfied, satisfied up to some extent and dissatisfied.

Table 2: Users Satisfaction With Library Resources

Library collection	Fully Satisfied	Satisfied up to some extent	Dissatisfied	Total	Mean	Rank
Text Books	47.1	52.5	0.4	100.0	2.467	2
General Books	36.3	63.7	0.0	100.0	2.363	6
Reference Books	40.7	59.0	0.3	100.0	2.404	3
Journals (Print)	36.7	61.1	2.2	100.0	2.344	8
E-Books	35.7	64.3	0.0	100.0	2.357	7
E-Journals	37.8	62.2	0.0	100.0	2.378	5
Newspaper/Magazine	59.4	34.7	6.2	100.0	2.532	1

Research reports/Thesis/ Conference Proceedings	32.1	67.9	0.0	100.0	2.321	9
Non-Book Materials	38.8	61.3	0.0	100.0	2.388	4
Overall satisfaction score	2.39					

The overall satisfaction score of the library users was 2.39, which depicts the high level of satisfaction of library users towards the library resources. The highest rank was given to newspapers/magazines, followed by text books and reference books while the least rank was given to printed journal and Research reports/Thesis/Conference Proceedings. The highest percentage of library users were satisfied up to some extent only towards all the resources namely; text books, general books, reference books, journals, e-books, e-journals, Research reports/Thesis/Conference Proceedings and non-book materials except for the newspapers/magazines. For newspapers/magazines the 59.4 percentage of library users were fully satisfied, 34.2 percentage library users were satisfied up to some extent and only 6.2 percent of library users were dissatisfied. Overall, the library users were found to be satisfied towards the library resources.

Table 3: Type of organization and users' satisfaction with library resources

	N	Mean	Std. Deviation	Std. Error
Private	342	2.3755	.25556	.01382
CFTI	150	2.5147	.19776	.01615
State govt	183	2.4117	.26850	.01985
Central Govt	045	2.0709	.07833	.01168
Total	720	2.3946	.25984	.00968
F-value = 40.593, p-value 0.000				

(Source: Primary Data)

The mean value of library users' satisfaction towards the library resources of central funded technical institutes was 2.51, which is highest among four types of educational institutes, followed by the library users of state government institutes. While the mean score of library users' satisfaction towards the library resources of central universities was 2.07, which is the least among four types of educational institutes. Hence, the satisfaction level of library users towards the library resources varies among different types of educational institutes. Results depicts a significant impact of type of educational institutions over the satisfaction level of the library users towards the library resources, based on the f-value (40.593) at a p-value of 0.000. Hence, the null hypothesis gets rejected which states that satisfaction level of library users towards the library resources varies among different types of educational institutes. Users of central funded technical institutes were found to be highly satisfied with the library resources.

Table 4: Type of users and satisfaction with library resources

	N	Mean	Std. Deviation	Std. Error
UG students	206	2.3669	.23900	.01665
PG students	203	2.3870	.25849	.01814
Research Scholar	114	2.4185	.24006	.02248
Faculty Member	137	2.4125	.29914	.02556
Others	060	2.4095	.27014	.03488
Total	720	2.3946	.25984	.00968
F-value = 1.303, p-value 0.267				

(Source: Primary Data)

The mean value of satisfaction of research scholars towards the library resources was 2.418, which is highest among different types of library users, followed by the faculty members of the selected educational institutes. While the mean score of post graduate students' satisfaction towards the library

resources was 2.38 and 2.36 was of graduate students' mean score of satisfaction towards the library resources, which is the least among different types of library users. Hence, the satisfaction level of library users towards the library resources varies. Results depicts an insignificant impact of type of library users over their satisfaction level towards the library resources, based on the f-value (1.303) at a p-value of 0.267. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library resources varies among different types of users. Research scholars and faculty members were found to be highly satisfied with the library resources.

Table 5: Age group and users' satisfaction with library resources

	N	Mean	Std. Deviation	Std. Error
21 to 25	191	2.3457	.24790	.01794
26 to 30	148	2.4414	.27818	.02287
31 to 35	116	2.4486	.26758	.02484
Above 35	085	2.4442	.24607	.02669
Total	720	2.3946	.25984	.00968
F-value = 6.435, p-value 0.000				

(Source: Primary Data)

Library users from age group of 31 to 35 years found to have highest mean score for the satisfaction level towards the library resources, followed by the library users from age group of above 35 years. The least satisfied library users were below 20 and 21 to 25-year age group, towards the library resources. Overall, the age wise satisfaction level of library users varies towards the library resources. Results depicts a significant impact of age group of library users over their satisfaction level towards the library resources, based on the f-value (6.435) at a p-value of 0.000. Hence, the null hypothesis gets rejected which states that satisfaction level of library users towards the library resources varies among different age groups. 31 to 35 years and above 35 years' age group were found to be highly satisfied with the library resources.

Table 6: Frequency to visit the library and users' satisfaction with library resources

	N	Mean	Std. Deviation	Std. Error
Daily	306	2.3792	.25797	.01475
Twice in a week	63	2.4156	.22752	.02867
Once in a week	121	2.4018	.25222	.02293
Fortnightly	128	2.3971	.25989	.02297
Rarely	102	2.1166	.29298	.02901
Total	720	2.3946	.25984	.00968
F-value = 0.580, p-value 0.677				

(Source: Primary Data)

The mean score of satisfaction level of library users towards the library resources, was found 2.41 which is highest among the library users who visit the library twice in a week, followed by the library users who visits the library once in a week and fortnightly. Least score was 2.11, the satisfaction level of library users towards library resources was among the library users who visit the library rarely. Results depicts an insignificant impact of frequency of visit to the library by users over their satisfaction level towards the library resources, based on the f-value (0.580) at a p-value of 0.677. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library resources varies among users based on their frequency of visit to the library. Library users who visit the library twice in a week, and once in a week were found to be highly satisfied with the library resources.

Table 7: Users Satisfaction with Library Facilities

Library facilities	Fully Satisfied	Satisfied up to some extent	Dissatisfied	Total	Mean	Rank
Reading Room area	59.7	40.1	0.1	100.0	2.60	1
Stack area	50.0	50.0	0.0	100.0	2.50	4
Ventilation and lighting	47.2	52.5	0.1	100.0	2.51	3
Furniture & Fixtures	44.4	55.6	0.0	100.0	2.44	5
Maintenance/Cleaning etc.	40.1	59.9	0.0	100.0	2.40	6
Drinking water etc.	58.6	41.3	0.1	100.0	2.58	2
Overall satisfaction score	2.50					

(Source: Primary Data)

The overall satisfaction score of the library users was 2.50, which depicts the high level of satisfaction of library users towards the library facilities. The highest rank was given to reading room area, followed by drinking water and ventilation and lighting while the least rank was given to maintenance/cleaning and furniture & fixtures. The highest percentage of library users were satisfied up to some extent only towards all the facilities namely; stack area, ventilation and lighting, furniture & fixtures, maintenance/cleaning except for the reading room area and drinking water. For reading room area, 59.7 percentage of library users were fully satisfied, 40.1 percentage library users were satisfied up to some extent and only 0.1 percent of library users were dissatisfied. Overall, the library users were found to be satisfied towards the library facilities.

Table 8: Type of users and Satisfaction with library facilities

	N	Mean	Std. Deviation	Std. Error
Private	342	2.5551	.28743	.01554
CFTI	150	2.3843	.21509	.01756
State govt	183	2.5454	.23463	.01734
Central Govt	045	2.3884	.79279	.11818
Total	720	2.5066	.32659	.01217
F-value = 12.961, p-value 0.267				

(Source: Primary Data)

The mean value of library users' satisfaction towards the library facilities of private universities was 2.55, which is highest among four types of educational institutes, followed by the library users of state government institutes. While the mean score of library users' satisfaction towards the library facilities of central funded technical institutes was 2.384, which is the least among four types of educational institutes. Hence, the satisfaction level of library users towards the library facilities varies among different types of educational institutes. Results depicts a significant impact of type of educational institutions over the satisfaction level of the library users towards the library facilities, based on the f-value (12.961) at a p-value of 0.000. Hence, the null hypothesis gets rejected which states that satisfaction level of library users towards the library facilities varies among different types of educational institutes. Users of private universities were found to be highly satisfied with the library facilities.

Table 9: Type of users and Satisfaction with library facilities

	N	Mean	Std. Deviation	Std. Error
UG students	206	2.4935	.43425	.03026
PG students	203	2.5131	.26804	.01881
Research Scholar	114	2.5089	.27628	.02588
Faculty Member	137	2.5154	.27878	.02382
Others	060	2.5055	.26905	.03473
Total	720	2.5066	.32659	.01217
F-value = 0.128, p-value 0.972				

(Source: Primary Data)

The mean value of satisfaction of faculty members towards the library facilities was 2.5154, which is highest among different types of library users, followed by the post graduate students of the selected educational institutes. While the mean score of research scholars' satisfaction towards the library facilities was 2.50 and 2.49 was of graduate students' mean score of satisfaction towards the library facilities, which is the least among different types of library users. Hence, the satisfaction level of library users towards the library facilities varies. Results depicts an insignificant impact of type of library users over their satisfaction level towards the library facilities, based on the f-value (0.128) at a p-value of 0.2972. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library facilities varies among different types of users. Post graduate students and faculty members were found to be highly satisfied with the library facilities.

Table 10: Age group of library users and Satisfaction with library facilities

	N	Mean	Std. Deviation	Std. Error
Below 20	180	2.4686	.25890	.01930
21 to 25	191	2.4862	.26116	.01890
26 to 30	148	2.5189	.28092	.02309
31 to 35	116	2.5685	.53284	.04947
Above 35	085	2.5274	.28111	.03049
Total	720	2.5066	.32659	.01217
F-value = 1.988, p-value 0.095				

(Source: Primary Data)

Library users from age group of 31 to 35 years found to have highest mean score for the satisfaction level towards the library facilities, followed by the library users from age group of above 35 years. The least satisfied library users were below 20 and 21 to 25-year age group, towards the library facilities. Overall, the age wise satisfaction level of library users varies towards the library facilities. Results depicts an insignificant impact of age group of library users over their satisfaction level towards the library facilities, based on the f-value (1.988) at a p-value of 0.095. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library facilities varies among different age groups. 31 to 35 years and above 35 years' age group were found to be highly satisfied with the library facilities.

Table 11: Frequency to visit the library and Satisfaction with library facilities

	N	Mean	Std. Deviation	Std. Error
Daily	306	2.5119	.39107	.02236
Twice in a week	63	2.5132	.26578	.03348
Once in a week	121	2.5081	.27335	.02485
Fortnightly	128	2.4792	.26252	.02320
Rarely	102	2.3194	.27831	.02756
Total	720	2.5066	.32659	.01217
F-value = 0.290, p-value 0.884				

(Source: Primary Data)

The mean score of satisfaction level of library users towards the library facilities, was found 2.5132 which is highest among the library users who visit the library twice in a week, followed by the library users who visits the library daily and once in a week. Least score was 2.31, the satisfaction level of library users towards library facilities was among the library users who visit the library rarely. Results depicts an insignificant impact of frequency of visit to the library by users over their satisfaction level towards the library facilities, based on the f-value (0.290) at a p-value of 0.884. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library facilities varies among users based on their frequency of visit to the library. Library users who visit the library twice in a week, and once in a week were found to be highly satisfied with the library facilities.

Table 12: Users Satisfaction with Library Services

Library services	Fully Satisfied	Satisfied up to some extent	Dissatisfied	Total	Mean	Rank
Circulation Service (Books Issue/Return etc.)	45.4	54.4	0.1	100.0	2.45	1
Inter Library Loan (if available)	35.6	64.2	0.3	100.0	2.35	6
Reference Service	37.2	62.8	0.0	100.0	2.37	5
Xerox Service (Photo-copy)	42.2	57.8	0.0	100.0	2.42	2
OPAC (Library database searching)	39.0	61.0	0.0	100.0	2.39	4
Current Awareness Service	32.9	66.8	0.3	100.0	2.33	7
Internet Searching	41.1	58.8	0.1	100.0	2.41	3
Document Delivery Service	20.7	79.0	0.3	100.0	2.20	8
Overall satisfaction score	2.36					

(Source: Primary Data)

The overall satisfaction score of the library users was 2.36, which depicts the high level of satisfaction of library users towards the library services. The highest rank was given to circulation services, followed by Xerox and internet searching while the least rank was given to document delivery and current awareness services. The highest percentage of library users were satisfied up to some extent only towards all the services namely; circulation services, inter library loan, reference services, library database searching, internet searching, document delivery and current awareness services. For circulation services, 45.4 percentage of library users were fully satisfied, 54.4 percentage library users were satisfied up to some extent and only 0.1 percent of library users were dissatisfied. Overall, the library users were found to be satisfied towards the library services.

Table 13: Satisfaction with library services

	N	Mean	Std. Deviation	Std. Error
Private	342	2.3776	.27185	.01470
CFTI	150	2.3817	.18534	.01513
State govt	183	2.4057	.25542	.01888
Central Govt	045	2.0694	.08238	.01228
Total	720	2.3663	.25518	.00951
F-value = 24.315, p-value 0.000				

(Source: Primary Data)

The mean value of library users' satisfaction towards the library services of state universities was 2.40, which is highest among four types of educational institutes, followed by the library users of central funded technical institutes. While the mean score of library users' satisfaction towards the library services of central universities was 2.06, which is the least among four types of educational institutes. Hence, the satisfaction level of library users towards the library services varies among different types of educational institutes. Results depicts a significant impact of type of educational institutions over the satisfaction level of the library users towards the library services, based on the f-value (24.315) at a p-value of 0.000. Hence, the null hypothesis gets rejected which states that satisfaction level of library users towards the library services varies among different types of educational institutes. Library users of state universities were found to be highly satisfied with the library services.

Table 14: Age group of library users and Satisfaction with library services

	N	Mean	Std. Deviation	Std. Error
Below 20	180	2.3472	.24095	.01796
21 to 25	191	2.3357	.25117	.01817
26 to 30	148	2.3970	.26030	.02140
31 to 35	116	2.3890	.27523	.02555
Above 35	085	2.3912	.25059	.02718
Total	720	2.3663	.25518	.00951
F-value = 1.912, p-value 0.107				

(Source: Primary Data)

Library users from age group of 26 to 30 years found to have highest mean score for the satisfaction level towards the library services, followed by the library users from age group of above 35 years. The least satisfied library users were below 20 and 21 to 25-year age group, towards the library services. Overall, the age wise satisfaction level of library users varies towards the library services. Results depicts an insignificant impact of age group of library users over their satisfaction level towards the library services, based on the f-value (1.912) at a p-value of 0.107. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library services varies among different age groups. 26 to 30 years and above 35 years' age group were found to be highly satisfied with the library services.

Table 15: Type of users and Satisfaction with library services

	N	Mean	Std. Deviation	Std. Error
UG students	206	2.3665	.24679	.01719
PG students	203	2.3664	.26459	.01857
Research Scholar	114	2.3794	.23748	.02224
Faculty Member	137	2.3586	.26638	.02276
Others	060	2.3583	.26488	.03420
Total	720	2.3663	.25518	.00951
F-value = 0.120, p-value 0.975				

(Source: Primary Data)

The mean value of satisfaction of research scholars towards the library services was 2.3794, which is highest among different types of library users, followed by the graduate students of the selected educational institutes. While the mean score of post graduate students' satisfaction towards the library services was 2.3664 and 2.3586 was of faculty members' mean score of satisfaction towards the library services, which is the least among different types of library users. Hence, the satisfaction level of library users towards the library services do not vary. Results depicts an insignificant impact of type of library users over their satisfaction level towards the library services, based on the f-value (0.120) at a p-value of 0.975. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library services varies among different types of users. Research scholars and graduate students were found to be highly satisfied with the library services.

Table 16: Frequency to visit the library and Satisfaction with library services

	N	Mean	Std. Deviation	Std. Error
Daily	306	2.3709	.25843	.01477
Twice in a week	63	2.3929	.22322	.02812
Once in a week	121	2.3378	.24877	.02262
Fortnightly	128	2.3369	.24126	.02132
Rarely	102	2.2069	.28346	.02807
Total	720	2.3663	.25518	.00951
F-value = 1.647, p-value 0.161				

(Source: Primary Data)

The mean score of satisfaction level of library users towards the library services, was found 2.39 which is highest among the library users who visit the library twice in a week, followed by the library users who visits the library daily and once in a week. Least score was 2.20, the satisfaction level of library users towards library services was among the library users who visit the library rarely. Results depicts an insignificant impact of frequency of visit to the library by users over their satisfaction level towards the library services, based on the f-value (1.647) at a p-value of 0.161. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library services varies among users based on their frequency of visit to the library. Library users who visit the library twice in a week, and daily were found to be highly satisfied with the library services.

Table 17: Users Satisfaction with Library Automation Services

Library automation services	Fully Satisfied	Satisfied up to some extent	Dissatisfied	Total	Mean	Rank
OPAC / library database searches	41.8	51.8	6.4	100.0	2.35	1
Circulation (Books Issue /Return etc.)	38.3	55.6	6.1	100.0	2.32	2
Institutional Repository	19.9	45.2	34.9	100.0	1.85	6
Information Retrieval services (new arrivals, CAS, SDI etc.)	23.5	69.3	7.2	100.0	2.16	4
Stack management	31.8	61.8	6.4	100.0	2.25	3
Inter library loan service	17.4	75.1	7.5	100.0	2.10	5
Overall satisfaction score				2.17		

(Source: Primary Data)

The overall satisfaction score of the library users was 2.17, which depicts the moderate level of satisfaction of library users towards the library automation services. The highest rank was given to OPAC / library database searches, followed by Circulation (Books Issue/Return etc.) and stack management while the least rank was given to Information Retrieval services (new arrivals, CAS, SDI etc.) and Inter library loan services. The highest percentage of library users were satisfied up to some extent only towards all the automation services namely; library database search, Circulation (Books Issue/Return etc.), Institutional Repository, Information Retrieval services (new arrivals, CAS, SDI etc.), Stack management and Inter library loan service. For OPAC / library database searches, 41.8 percentage of library users were fully satisfied, 51.8 percentage library users were satisfied up to some extent and only 6.4 percent of library users were dissatisfied. Overall, the library users were found to be satisfied towards the library automation services.

Table 18: Type of organization and Satisfaction with library automation services

	N	Mean	Std. Deviation	Std. Error
Private	342	2.1908	.27328	.01478
CFTI	150	2.0011	.66681	.05444
State govt	183	2.2851	.20953	.01549
Central Govt	045	2.1704	.10353	.01543
Total	720	2.1740	.38580	.01438
F-value = 16.292, p-value 0.000				

(Source: Primary Data)

The mean value of library users' satisfaction towards the library automation services of state universities was 2.28, which is highest among four types of educational institutes, followed by the library users of private universities. While the mean score of library users' satisfaction towards the library automation services of central funded technical institutes was 2.00, which is the least among four types of educational institutes. Hence, the satisfaction level of library users towards the library automation services varies among different types of educational institutes. Results depicts a significant impact of type of educational institutions over the satisfaction level of the library users towards the library automation services, based on the f-value (16.592) at a p-value of 0.000. Hence, the null hypothesis gets rejected which states that satisfaction level of library users towards the library automation services varies among different types of educational institutes. Library users of state universities were found to be highly satisfied with the library automation services.

Table 19: Age group of library users and Satisfaction with library automation services

	N	Mean	Std. Deviation	Std. Error
Below 20	180	2.1126	.42411	.03161
21 to 25	191	2.1649	.35002	.02533
26 to 30	148	2.1982	.31965	.02627
31 to 35	116	2.1983	.44663	.04147
Above 35	085	2.2490	.38199	.04143
Total	720	2.1740	.38580	.01438
F-value = 2.246, p-value 0.063				

(Source: Primary Data)

Library users from age group above 35 years found to have highest mean score for the satisfaction level towards the library automation services, followed by the library users from age group of 31 to 35 years. The least satisfied library users were below 20 and 21 to 25-year age group, towards the library automation services. Overall, the age wise satisfaction level of library users varies towards the library automation services. Results depicts an insignificant impact of age group of library users over their satisfaction level towards the library automation services, based on the f-value (2.246) at a p-value of 0.063. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library automation services varies among different age groups. Above 35 years' age group was found to be highly satisfied with the library automation services.

Table 20: Type of users and Satisfaction with library automation services

	N	Mean	Std. Deviation	Std. Error
UG students	206	2.1615	.39230	.02733
PG students	203	2.1642	.37652	.02643
Research Scholar	114	2.1711	.41450	.03882
Faculty Member	137	2.1910	.36242	.03096
Others	060	2.1167	.39809	.05139
Total	720	2.1740	.38580	.01438
F-value = 0.337, p-value 0.853				

(Source: Primary Data)

The mean value of satisfaction of faculty members towards the library automation services was 2.19, which is highest among different types of library users, followed by the research scholars of the selected educational institutes. While the mean score of post graduate students' satisfaction towards the library automation services was 2.164 and 2.161 was of graduate students' mean score of satisfaction towards the library automation services, which is the least among different types of library users. Hence, the satisfaction level of library users towards the library automation services varies. Results depicts an insignificant impact of type of library users over their satisfaction level towards the library automation services, based on the f-value (0.337) at a p-value of 0.853. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library automation services varies among different types of users. Research scholars and faculty members were found to be highly satisfied with the library automation services.

Table 21: Frequency to visit and Satisfaction with library automation services

	N	Mean	Std. Deviation	Std. Error
Daily	306	2.1577	.36975	.02114
Twice in a week	63	2.1852	.46191	.05820
Once in a week	121	2.1612	.41384	.03762
Fortnightly	128	2.1719	.38732	.03423
Rarely	102	2.1337	.34490	.03415
Total	720	2.1740	.38580	.01438
F-value = 0.793, p-value 0.530				

(Source: Primary Data)

The mean score of satisfaction level of library users towards the library automation services, was found 2.18 which is highest among the library users who visit the library twice in a week, followed by the library users who visits the library fortnightly and once in a week. Least score was 2.13, the satisfaction level of library users towards library automation services was among the library users who visit the library rarely. Results depicts an insignificant impact of frequency of visit to the library by users over their satisfaction level towards the library automation services, based on the f-value (0.793) at a p-value of 0.530. Hence, the null hypothesis gets accepted which states that satisfaction level of library users towards the library automation services varies among users based on their frequency of visit to the library. Library users who visit the library twice in a week, and fortnightly were found to be highly satisfied with the library automation services.

CONCLUSION

Library automation necessitates using certain automated and semi-automatic tools to achieve the same task objectives relevant in manual libraries. It has been defined in several ways by various researchers. Some have focused on the area of services it takes up like organisation, acquisition, etc. while others put the convenience it offers in limelight. The evolution has highlighted the steady growth and momentum gained by automated service in the library industry. Like any other industry, library automation faces several challenges. Most important of those being lack of structured planning, dearth of both economic and technological resources, negligible availability of skilled professionals, struggles with training and education; and unreliable power supply, especially in the case of developing countries. Automated library services also come with their advantages and disadvantages. Advantages that stand out are quick services, time-effective, reduced workload, a huge array of data, easy functioning and easy manipulation of data, rapid cataloguing, registration, and organisation, etc. Some of the disadvantages include high budget, adverse effects on employment and employee payments, the requirement of prior training and orientation, power-dependent, added costs, lack of sufficient numbers of computers, etc. The areas where library automation has proven to be functional are data entry, serials control, networking, control of circulation, identification, classification, setting up of resources, and other services. The technological age necessitates the use of library outcomes around organisations and institutions of the world. It is the only way of research and gathering intelligence and useful knowledge in this era of technological advancement.

Overall, it can be concluded that the library users were found to be satisfied towards the library resources, but the satisfaction level of library users towards the library resources varies among different types of educational institutes. Users of central funded technical institutes were found to be highly satisfied with the library resources. Research scholars and faculty members were found to be highly satisfied with the library resources. 31 to 35 years and above 35 years' age group were found to be highly satisfied with the library resources. Library users who visit the library twice in a week, and once in a week were found to be highly satisfied with the library resources. The library users were found to

be satisfied towards the library facilities such as; reading rooms, stack area, drinking water, ventilation and lighting, furniture & fixtures, etc. The satisfaction level of library users towards the library facilities varies among different types of educational institutes. Users of private universities were found to be highly satisfied with the library facilities. Post graduate students and faculty members were found to be highly satisfied with the library facilities. 31 to 35 years and above 35 years' age group were found to be highly satisfied with the library facilities. Library users who visit the library twice in a week, and once in a week were found to be highly satisfied with the library facilities. The library users were found to be satisfied towards the library services such as; circulation services, inter library loan, reference services, Xerox services and OPAC etc. The satisfaction level of library users towards the library services varies among different types of educational institutes. Library users of state universities were found to be highly satisfied with the library services. 26 to 30 years and above 35 years' age group were found to be highly satisfied with the library services. Research scholars and graduate students were found to be highly satisfied with the library services. Library users who visit the library twice in a week, and daily were found to be highly satisfied with the library services. The library users were found to be satisfied towards the library automation services such as; library database searches, circulation, institutional repository, inter library loan services, stack management etc. The satisfaction level of library users towards the library automation services varies among different types of educational institutes. Library users of state universities were found to be highly satisfied with the library automation services. Above 35 years' age group was found to be highly satisfied with the library automation services. Research scholars and faculty members were found to be highly satisfied with the library automation services. Library users who visit the library twice in a week, and fortnightly were found to be highly satisfied with the library automation services. Majority of the library users were found to be satisfied with the library opening hours. Problems faced by the library users were mainly due to lack of computers, slow speed of internet or connectivity, and power cut, while least problematic area were inadequate library staff and less user-friendly software. Users from fully automated libraries were facing less problems in comparison to the partially automated libraries. Users from central funded institutes were facing higher problems due to library automation.

Practical Implications

The study was conducted over library automation in educational institutions; hence it can be useful as a guiding factor by the educational institutions while taking decision related to the library automation. Study highlights the factors which affects the decision or which are basic conditions in framing the opinions of the librarians towards the automation of library functions, educational institutes which are going to opt for automation can focus on these factors for better implementation of the automation in libraries. Study showed the importance of library automation for the library users in educational institutes and it helps in increasing knowledge of library users, contributing to the research activities and saving time and cost for acquiring online resources by research scholars and faculty members. Hence, this study has greater implications for the educational institutions who have not gone for the automation services or who have partially automated their library functions. It is also useful for the educational institutions which have already opted automated library services either partially or fully. It provides the way to make these services more effective.

Limitations and Future Scope of the Study

The study was conducted for private, state government, central government and central funded technical institutes at university level, while autonomous b-schools, medical colleges, or affiliated colleges have not considered in the study. By covering all types of small or large size educational institutes can give a detailed examination of the library automation system. The study is limited to one state i.e., Himachal Pradesh, while it can be extended to other states, or a cross sectional study can be

done to see the library automation state wise. The difference in the perceptions of the users and librarians have not been measured in the current study, one is the service provider and another is service taker, hence in future researches perceptions of these two groups of respondents can be compared.

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