

Assessing library professionals' attitude towards information technology applications in three university libraries of North India

Tarvinder Singh Handa

Indian Institute of Technology Ropar, India

Gurpreet Singh

Goswami Ganesh Dutta S. D. College, Chandigarh, India

Jagtar Singh

Department of Library and Information Science, Guru Kashi University, India

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Abstract

Purpose: The purpose of the present study is to assess the attitude of library professionals towards information technology (IT) implementation in three university libraries in North India.

Methodology: The study uses a survey research method in order to ascertain the attitude of library professionals. The primary data was collected from 91 library professionals (professionals, semi-professionals and para-professionals) through structured questionnaires that were then analyzed using Pearson Chi-square analysis.

Findings: The study reveals that there is a positive attitude among library professionals towards the implementation of IT in university libraries.

Originality: The study adds value to the current literature on academic libraries in India and is one of the cutting-edge studies to look into library professionals' attitude towards information technology applications in university libraries.

Practical implications: The findings suggest that a positive attitude of library professionals was instrumental in implementing the technology in context. However, implementing and maintaining technological infrastructure is an expensive affair that demands investing more funds on the part of university authorities.

Keywords: Library professionals, attitude, information technology (IT), university libraries, North India.

1. Introduction

The primary function of an academic library is to procure a comprehensive range of study materials, including books, manuscripts, journals, magazines, newspapers, etc., to foster the academic and learning environment of the parent organization. The implementations of ICTs have caused significant changes in the pattern and delivery of library services. Over the past three decades, university libraries in India have experimented with emerging social, mobile, and dynamic technologies to develop a more responsive range of user services. As a result, the beginning of the twenty-first century witnessed a widespread application and use of information and communication technologies in various areas of libraries, i.e., collection development and management, classification and cataloguing, reference and awareness services, serials control, and electronic document delivery service to mention a few.

Experience reveals that there is a corresponding relation between the success rate of technological advancement in a library and the library professional's level of expertise in implementing and operating the particular technology. Ramzan, Asif and Ahmad (2021) observe that the positive attitude of library professionals is largely influenced by the librarians' expertise in information technology and libraries' information technology availability. Babafemi (2017) points out that technology itself does not bring about changes and it is the librarians who use technology as a strategic resource to innovate library infrastructure, systems, services, and resources for the users. Hence, it becomes pertinent to know the attitude of library professionals towards the use of various information technology applications in libraries in the Indian context.

The present study aims to study the attitude of library professionals in three university libraries in north India, viz. Kurukshetra University, Kurukshetra, Panjab University, Chandigarh, and Punjabi University Patiala. The three universities are temporal centers of learning, imparting knowledge, and research to a wider student community of the region as well as students from abroad. The libraries of these universities are well-equipped with modern-day technology.

2. Literature review

The crucial factor to the realization and successful utilization of technical advancement by a university library is the positive attitude of library professionals, which leads to the acceptance of ICTs amongst them. In psychology, an attitude refers to a set of emotions, beliefs, and behaviors towards a particular object, person, thing, or event (Cherry, 2022). Crano and Prislin (2006) observed that an individual's attitude represents an evaluative integration of cognitions and affects experienced in relation to an object.

The review of literature in the concerned area reveals that the extent of technological advancement in library setup largely depends on the factor of how positive the professionals of a library are who operate a technology. Ramzan et al. (2021) opined that library professionals with positive attitude towards information technology will

undoubtedly accept the new technologies and further accelerate their application in libraries. Investigations by Freudenthal (2001) and Hendrix (2007) revealed that gender and age are significant factors in librarians' attitude towards information technology applications. Melchionda (2007) pointed out that library professionals will continue to exist as professionals as long as they are able to design and tailor services with a solid user-centric perspective.

Rajaram (2003) stated that users' satisfaction or dissatisfaction in libraries is directly related to the adequacy or inadequacy of infrastructural facilities available in the library setup. As technology for libraries becomes more sophisticated and more affordable, the range and variety of services that are provided by libraries also increase, and so does the demand of library users. However, the success of technology implementation in libraries primarily depends on library professionals' awareness of IT potential, recency of professional qualification and their IT knowledge (Ramzan, 2004). Singh and Singh (2019) further observed that a positive attitude among the librarians was instrumental in implementing newer technology in libraries. However, Ejedafiru and Oghenetega (2003) found that frequency of ICT usage, perceived skill level and training in using ICT were factors that strongly impacted the attitude of professional librarians.

3. Significance of the study

There has been a widespread use of technology in university libraries in India in the 21st century. The application of technology in libraries has been proven to be a boon for the user community, especially during the pandemic of COVID-19 by providing them easy access to a wide variety of information resources and services. Even though funding for libraries is declining, Indian university libraries are making a concerted effort to allocate a significant percentage of their budget to implementing the newest ICT infrastructure. However, to measure the success rate of technological advancement in libraries, it is pertinent to know how well the technology in context is being perceived by librarians and library administrators. Hence, it becomes instrumental to study librarians' attitudes toward implementing various information and technology applications in libraries of higher educational institutions.

4. Objective of the study

The general objective of this study is to assess the attitude of library professionals towards the application and use of ICT and allied services in the university libraries of north India. The specific objectives of the study are:

- To ascertain the attitude of library staff towards information technology applications in university libraries.
- To assess the differences in the attitude of library staff towards information technology applications in libraries as per gender.
- To examine the differences in the attitude of staff towards information technology applications in libraries as per their qualification.

- To inspect whether there is a difference in the attitude of staff towards information technology applications in libraries as per their experience.

5. Methodology

In order to assess the attitude of library professionals towards information technology applications in libraries, a structured questionnaire containing 15 statements was distributed among 107 library professionals working in three university libraries in north India. A total of 91 (85.05%) valid responses were received by the researchers. The Pearson Chi-square statistical method was executed to analyze the data to find the attitude of library professionals and to find the significant relationship among them as per gender, qualification, and work experience. A descriptive statistical method using the Statistical Package for Social Sciences (SPSS) software was used to analyze the collected data. To ascertain the attitude of library professionals, question statements concerning the perspective of librarians were analyzed, and their Chi-square values were drawn.

6. Data analysis

The outputs of all question statements in the standard cross-tabulation table are described as follows:

6.1 Demographic description

Table 1 describes the demographic description of the respondents which reveals that the female category (57.10%) dominated over the males (42.90%). The cumulative percentage indicates that out of the total 91 subjects, 60 (65.90%) respondents belonged to the young age group, i.e., below 25 years to 45 years. Although, all three university libraries have the sanctioned post of librarian, only one respondent at Punjabi University of Patiala occupied the top post. 38 respondents (41.8%) were working as library assistants, followed by 22 (24.2%) working as library attendants. The majority of the library professionals had master's degree to their credit, closely followed by double master's (22.0%).

The table further reveals that the majority of the library professionals (30.8%) had work experience of more than 20 years. Forty-three professionals (47.3%) belonged to Punjabi University, followed by 29 respondents (31.9%) from Panjab University and remaining 19 respondents (20.9%) were from Kurukshetra University.

Table 1: Demographic description of respondents

Variable	Specification	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	39	42.9%	42.9%	42.9%
	Female	52	57.1%	57.1%	100%
	Total	91	100.0%	100.00%	
Age-group	Below 25	1	1.1%	1.1%	1.1%
	26-30	5	5.5%	5.5%	6.6%
	31-35	19	20.9%	20.9%	27.5%
	36-40	19	20.9%	20.9%	48.4%
	41-45	16	17.6%	17.6%	65.9%
	46-50	12	13.2%	13.2%	79.1%
	51 and above	19	20.9%	20.9%	100.0%
	Total	91	100.0%	100.00%	
Designation	Librarian	1	1.1%	1.1%	1.1%
	Deputy Librarian	8	8.8%	8.8%	9.9%
	Assistant Librarian	10	11.0%	11.0%	20.9%
	Library Assistant	38	41.8%	41.8%	62.6%
	Technical Officer/Assistant	2	2.2%	2.2%	64.8%
	Library Attendant	22	24.2%	24.2%	89.0%
	Semi Professional	8	8.8%	8.8%	97.8%
	Library Programmer	2	2.2%	2.2%	100.0%
Total	91	100.0%	100.00%		
Qualification	Diploma	9	9.9%	9.9%	9.9%
	Bachelor	14	15.4%	15.4%	25.3%
	Master	21	23.1%	23.1%	48.4%
	Double Master	20	22.0%	22.0%	70.3%
	Master + UGC-NET	16	17.6%	17.6%	87.9%
	PhD	11	12.1%	12.1%	100.0%
Total	91	100.0%	100.00%		

Experience	Up to 3 Years	3	3.3%	3.3%	3.3%
	4-5 Years	8	8.8%	8.8%	12.1%
	6-10 Years	22	24.2%	24.2%	36.3%
	11-15 Years	17	18.7%	18.7%	54.9%
	15-20 Years	13	14.3%	14.3%	69.2%
	More than 20 Years	28	30.8%	30.8%	100.0%
	Total	91	100.0%	100.0%	
University	Kurukshetra University	19	20.9%	20.9%	20.9%
	Panjab University	29	31.9%	31.9%	52.7%
	Punjabi University	43	47.3%	47.3%	100.0%
	Total	91	100.0%	100.0%	

6.2 Library professionals' attitude towards the application of computers and allied technologies in libraries as per gender

Data in table 2 provides the gender-wise views of 91 respondents concerning information technology applications in libraries. In response to the first statement, the majority of the male (97.4%) and female (96.2%) professionals replied that libraries should adopt new technology as quickly as possible. The survey reveals that the majority of the male (53.8%) and female (51.9%) professionals were part of the decision-making process while implementing information technology in their respective university libraries. Both male (76.9%) and female (86.5%) staffers felt that library support staff should be more involved in technological planning and decision-making processes. More than 80.0% of male and female professionals felt that computerization of library functions was very helpful in carrying the routine works and computerization in the library made their work more accurate. 76.9% of male and 86.5% of female respondents replied that they felt enjoyment while working on computers in the library.

The Chi-square test values for question statements 1-6 were much more than the critical value of 0.05, which indicated that there is no significant difference in the views of both male and female library professionals. Hence, unlike a previous study conducted by Simon (2006), wherein males showed more positive attitudes toward information technology than females, no difference was determined between the male and female respondents.

Table 2: Library professionals' gender association with attitude towards information technology

Statement	Attribute	Gender		Chi-square (<i>p-value</i>) N=91
		Male (N=39)	Female (N=52)	
1. Do you think that libraries should adopt new technology as quickly as possible?	Yes	38 (97.4%)	50 (96.2%)	χ^2 at 2 df = .795 (0.672)
	No	0 (0.0%)	1 (1.9%)	
	Don't know	1 (2.6%)	1 (1.9%)	
2. Were you involved in the decision-making of information technology (IT) application in your library?	Yes	21 (53.8%)	27 (51.9%)	χ^2 at 1 df = .033 (0.856)
	No	18 (46.2%)	25 (48.1%)	
3. Do you think that support staff should be more involved in technological planning and decisions than they are now?	Yes	30 (76.9%)	45 (86.5%)	χ^2 at 2 df = 2.206 (0.332)
	No	2 (5.1%)	3 (5.8%)	
	No opinion	7 (17.9%)	4 (7.7%)	
4. How helpful do you find computerization of library functions in your routine work?	Very helpful	34 (87.2%)	43 (82.7%)	χ^2 at 2 df = 2.162 (0.339)
	Helpful	4 (10.3%)	9 (17.3%)	
	Undecided	0 (0.0%)	0 (0.0%)	
	Not helpful	1 (2.6%)	0 (0.0%)	
	Barrier	0 (0.0%)	0 (0.0%)	
5. Computerization in library has made my work:	More accurate	38 (97.4%)	44 (84.6%)	χ^2 at 2 df = 4.240 (0.120)
	Just accurate	1 (2.6%)	6 (11.5%)	
	Undecided	0 (0.0%)	2 (3.8%)	
	Less accurate	0 (0.0%)	0 (0.0%)	
	Same as before	0 (0.0%)	0 (0.0%)	
6. My feelings about working on the computers in the library are reflected as:	Enjoyment	30 (76.9%)	45 (86.5%)	χ^2 at 4 df = 3.526 (0.474)
	Dislike	1 (2.6%)	0 (0.0%)	
	Tolerance	2 (5.1%)	3 (5.8%)	
	Inadequacy	1 (2.6%)	0 (0.0%)	
	Competency	5 (12.8%)	4 (7.7%)	

6.3 Technology learning attitudes of library professionals and availability of training avenues in the library

Table 3 provides a summary of library professionals' attitudes pertaining to their qualifications and their association with learning a new technology. The data indicates that a significant majority (over 90.0%) of respondents across all qualification levels felt excited whenever they had an opportunity to learn a new technology. The majority of professionals further agreed that the pace of technological advancement in libraries these days is very fast. However, 29.7% of professionals still felt that the pace at which new technology is being introduced in libraries is just right. A good majority (47.3%) of the respondents believed that the quality of technical support available in their respective sections is very good.

Table 3: Library professionals' qualification and its association with learning a new technology

Statement	Attribute	Responses as per qualification						Total	Chi-square (p-value) N=91
		Diploma	Bachelor	Master	Double Master	Master+ UGC-NET	PhD		
7. When I have an opportunity to learn a new technology, I:	Feel excited	5 (55.6%)	13 (92.9%)	20 (95.2%)	20 (100.0%)	14 (87.5%)	10 (90.9%)	82 (90.1%)	χ^2 at 20 df = 37.722 (0.10)
	Feel uncomfortable	1 (11.1%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	1 (6.3%)	0 (0.0%)	03 (3.3%)	
	Feel helpless	3 (33.3%)	0 (0.0%)	1 (4.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	04 (4.4%)	
	No impact	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (6.3%)	0 (0.0%)	01 (1.1%)	
	No reaction	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (9.1%)	01 (1.1%)	
	Total	9 (100.0%)	14 (100.0%)	21 (100.0%)	20 (100.0%)	16 (100.0%)	11 (100.0%)	91 (100.0%)	
8. What do you think about the pace at which the technology is being introduced in the libraries is:	Very fast	4 (44.4%)	6 (42.9%)	10 (47.6%)	8 (40.0%)	4 (25.0%)	2 (18.2%)	34 (37.4%)	χ^2 at 25 df = 32.129 (0.154)
	Fast	4 (44.4%)	1 (7.1%)	3 (14.3%)	5 (25.0%)	6 (37.5%)	1 (9.1%)	20 (22.0%)	
	Just right	1 (11.1%)	4 (28.6%)	7 (33.3%)	6 (30.0%)	2 (12.5%)	7 (63.6%)	27 (29.7%)	
	Slow	0 (0.0%)	2 (14.3%)	0 (0.0%)	0 (0.0%)	2 (12.5%)	1 (9.1%)	05 (5.5%)	
	Very slow	0 (0.0%)	1 (7.1%)	1 (4.8%)	1 (5.0%)	2 (12.5%)	0 (0.0%)	05 (5.5%)	
	Total	9 (100.0%)	14 (100.0%)	21 (100.0%)	20 (100.0%)	16 (100.0%)	11 (100.0%)	91 (100.0%)	
9. Quality of technical support available in your section is:	Excellent	2 (22.2%)	6 (42.9%)	5 (23.8%)	4 (20.0%)	2 (12.5%)	1 (9.1%)	20 (22.0%)	χ^2 at 20 df = 35.564 (0.017)
	Very good	4 (44.4%)	6 (42.9%)	10 (47.6%)	11 (55.0%)	5 (31.3%)	7 (63.6%)	43 (47.3%)	

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10. How do you prefer to learn about using the new technology in library:	Moderately good	3 (33.3%)	2 (14.3%)	6 (28.6%)	5 (25.0%)	3 (18.8%)	3 (27.3%)	22 (24.2%)		
	Poor	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (31.3%)	0 (0.0%)	05 (5.5%)		
	Very poor	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (6.3%)	0 (0.0%)	01 (1.1%)		
	Total	9 (100.0%)	14 (100.0%)	21 (100.0%)	20 (100.0%)	16 (100.0%)	11 (100.0%)	91 (100.0%)		
	In a workshop	4 (44.4%)	10 (71.4%)	14 (66.7%)	14 (70.0%)	5 (31.3%)	7 (63.6%)	54 (59.3%)		
	From experts in the field	4 (44.4%)	1 (7.1%)	2 (9.5%)	2 (10.0%)	1 (6.3%)	1 (9.1%)	11 (12.1%)		
	Personal hands-on-experience	0 (0.0%)	1 (7.1%)	3 (14.3%)	3 (15.5%)	9 (56.3%)	3 (27.3%)	19 (20.9%)		χ^2 at 15 df = 28.026 (0.021)
	From the peers	1 (11.1%)	2 (14.3%)	2 (9.5%)	1 (5.0%)	1 (6.3%)	0 (0.0%)	07 (7.7%)		
	Don't want to learn	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	00 (0.0%)		
	Total	9 (100.0%)	14 (100.0%)	21 (100.0%)	20 (100.0%)	16 (100.0%)	11 (100.0%)	91 (100.0%)		
11. Do you agree that library professionals are expected to learn too many things too fast?	Fully agree	4 (44.4%)	8 (57.1%)	15 (71.4%)	11 (55.0%)	3 (18.8%)	3 (27.3%)	44 (48.4%)	χ^2 at 20 df = 20.613 (0.420)	
	Agree	3 (33.3%)	5 (35.7%)	4 (19.0%)	6 (30.0%)	9 (56.3%)	4 (36.4%)	31 (34.1%)		
	Undecided	1 (11.1%)	0 (0.0%)	1 (4.8%)	1 (5.0%)	1 (6.3%)	1 (9.1%)	05 (5.5%)		
	Partially agree	1 (11.1%)	1 (7.1%)	0 (0.0%)	2 (10.0%)	3 (18.8%)	2 (18.2%)	09 (9.9%)		
	Don't agree	0 (0.0%)	0 (0.0%)	1 (4.8%)	0 (0.0%)	0 (0.0%)	1 (9.1%)	02 (2.2%)		
	Total	9 (100.0%)	14 (100.0%)	21 (100.0%)	20 (100.0%)	16 (100.0%)	11 (100.0%)	91 (100.0%)		

The table further reveals that a significant majority (59.3%) preferred to learn new technology in a workshop/structured class, followed by (20.9%) personal hands-on experience. 12.1% of professionals replied that they took the help of experts in the field to learn a new technology. Concerning the latest technology, more than 80.0% of the respondents either fully agree or agree that library professionals in the twenty-first century are expected to learn too many things too fast.

The Chi-square test values for question statements 7-11 indicated more values compared to the critical value of 0.05, which describes that there is no significant difference in the library professionals' level of qualification and their preferences to learn a new technology.

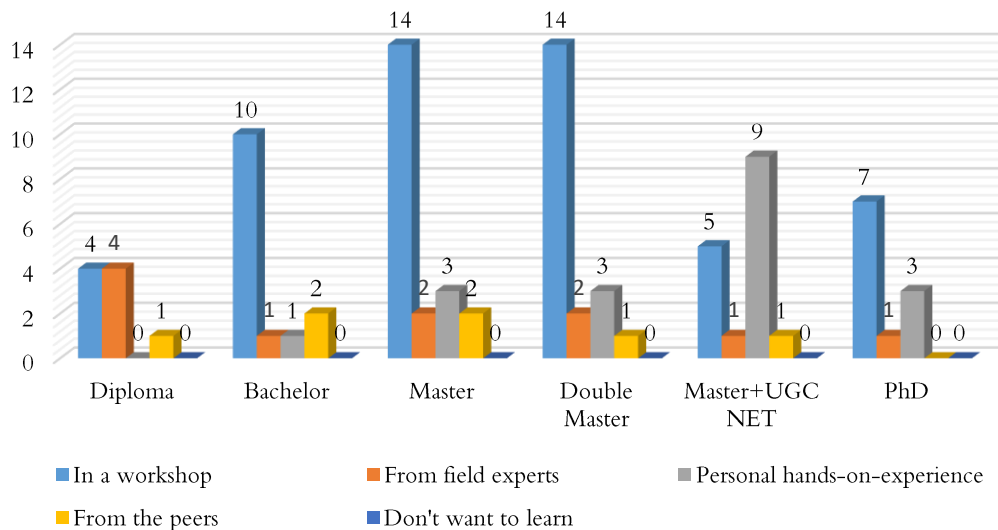


Figure 1: Library professionals' qualification and its association with learning a new technology

The bar chart represents the view expressed by the professionals with regard to their preference to learn a new technology. Overall, the majority of the respondents (59.3%) preferred to learn a new technology in a workshop. The study indicates that library professionals having higher qualifications were more confident in knowing a new technology with personal hands-on experience, and their dependency on learning a new technology from the experts in the field decreased with the increased level of qualification.

6.4 Pace of ICT application and its anticipatory effects on the functioning of libraries and job perspectives of librarians

Data in table 4 describes library professionals' feedback on the effects of ICT application on the functioning of libraries and its corresponding results from the job perspective of librarians. In response to statement 12, a large majority (70.4%) of respondents felt that the pace at which university libraries were progressing toward automation was either very fast (35.2%) or just right (35.2%). Similarly, in response to statement 13, 70.3% of respondents believe that implementing IT has improved the accuracy of keeping records in the library. Further, 63.7% of respondents assert that ICT application has added more to the responsibility of the library. Statement 15 was asked to check whether ICT application has affected the job perspectives of library professionals. In response, a good majority (51.6%) replied that technology has neither replaced nor displaced library professionals.

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Table 4: Effects of ICT application on the functioning of libraries and job perspectives of librarians

Statement	Attribute	Responses as per experience						Total	Chi-square (p-value) N=91
		Up to 3 Years	4-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years		
12. How would you rate the pace at which your library is progressing towards automation?	Very fast	1 (33.3%)	6 (75.0%)	7 (31.8%)	5 (29.4%)	1 (7.7%)	12 (42.9%)	32 (35.2%)	χ^2 at 20 df = 25.352 (0.188)
	Fast	0 (0.0%)	0 (0.0%)	3 (13.6%)	6 (35.3%)	7 (53.8%)	5 (17.9%)	21 (23.1%)	
	Just right	2 (66.7%)	1 (12.5%)	10 (45.5%)	5 (29.4%)	4 (30.8%)	10 (35.7%)	32 (35.2%)	
	Slow	0 (0.0%)	0 (0.0%)	1 (4.5%)	1 (5.9%)	0 (0.0%)	0 (0.0%)	02 (2.2%)	
	Very slow	0 (0.0%)	1 (12.5%)	1 (4.5%)	0 (0.0%)	1 (7.7%)	1 (3.6%)	04 (4.4%)	
	Total	3 (100.0%)	8 (100.0%)	22 (100.0%)	17 (100.0%)	13 (100.0%)	22 (100.0%)	91 (100.0%)	
13. Do you think that implementation of IT has improved the accuracy of keeping records in library?	More effectively	3 (100.0%)	7 (87.5%)	16 (72.7%)	10 (58.8%)	9 (69.2%)	19 (67.9%)	64 (70.3%)	χ^2 at 10 df = 7.438 (0.684)
	Effectively	0 (0.0%)	1 (12.5%)	6 (27.3%)	6 (35.3%)	4 (30.8%)	9 (32.1%)	26 (28.6%)	
	Less effectively	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	00 (0.0%)	
	Not at all	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	00 (0.0%)	
	No impact	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (5.9%)	0 (0.0%)	0 (0.0%)	01 (1.1%)	
	Total	3 (100.0%)	8 (100.0%)	22 (100.0%)	17 (100.0%)	13 (100.0%)	28 (100.0%)	91 (100.0%)	
14. Effects of ICT application on the responsibility of the library	Added more responsibility	2 (66.7%)	7 (87.5%)	11 (50.0%)	11 (64.7%)	10 (76.9%)	17 (60.7%)	58 (63.7%)	χ^2 at 20 df = 19.933 (0.462)
	Lessened the responsibility	1 (33.3%)	0 (0.0%)	9 (40.9%)	3 (17.6%)	2 (15.4%)	3 (10.7%)	18 (19.8%)	
	Marginal effect on responsibility	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (5.9%)	0 (0.0%)	2 (7.1%)	03 (3.3%)	
	No effect on responsibility	0 (0.0%)	0 (0.0%)	2 (9.1%)	1 (5.9%)	1 (7.7%)	5 (17.9%)	09 (9.9%)	
	Don't know	0 (0.0%)	1 (12.5%)	0 (0.0%)	1 (5.9%)	0 (0.0%)	1 (3.6%)	03 (3.3%)	
	Total	3 (100.0%)	8 (100.0%)	22 (100.0%)	17 (100.0%)	13 (100.0%)	28 (100.0%)	91 (100.0%)	
15. Effects of ICT application on the job perspectives of library professionals as the	Replaced by technology	1 (33.3%)	3 (37.5%)	2 (9.1%)	1 (5.9%)	0 (0.0%)	0 (0.0%)	07 (7.7%)	χ^2 at 20 df = 30.573 (0.061)
	Displaced by technology	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (5.9%)	0 (0.0%)	1 (3.6%)	02 (2.2%)	

people in library have been:								
Both replaced and displaced by technology	2 (66.7%)	2 (25.0%)	12 (54.5%)	6 (35.3%)	2 (15.4%)	9 (32.1%)	33 (36.3%)	
Neither replaced nor displaced by technology	0 (0.0%)	3 (37.5%)	7 (31.8%)	9 (52.9%)	11 (84.6%)	17 (60.7%)	47 (51.6%)	
Don't know	0 (0.0%)	0 (0.0%)	1 (4.5%)	0 (0.0%)	0 (0.0%)	1 (3.6%)	02 (2.2%)	
Total	3 (100.0%)	8 (100.0%)	22 (100.0%)	17 (100.0%)	13 (100.0%)	22 (100.0%)	91 (100.0%)	

The statistical inference using the Chi-square test with p-value > 0.05 precisely indicates that there was statistically no significant difference in the opinion of respondents with regard to the effects of ICT application in the functioning pattern of libraries and its correspondent results on the job perspectives of librarians.

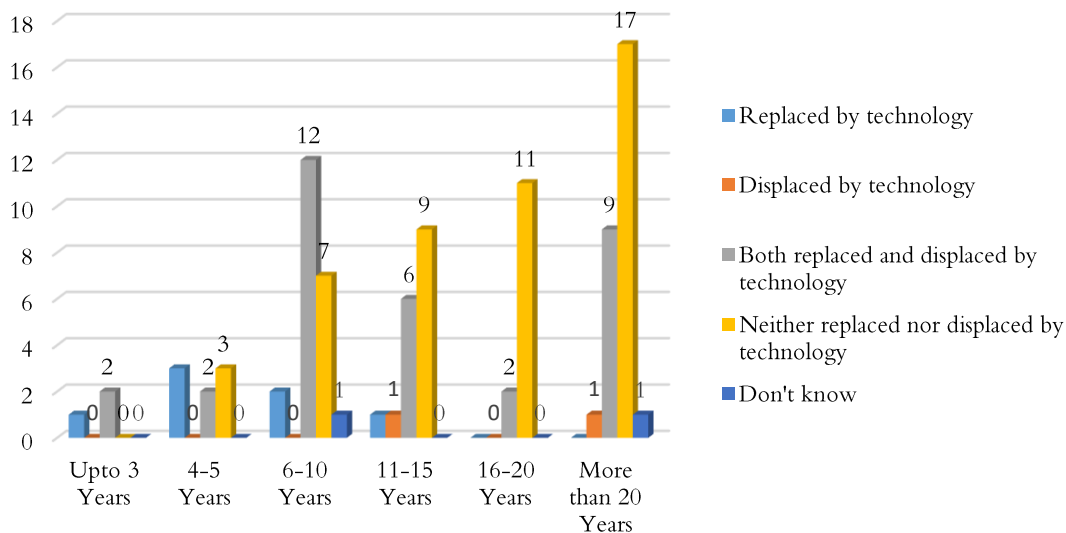


Figure 2: Effects of ICT application on job perspectives of library professionals

The bars in the above chart well depict the job perspectives of library professionals. Except for the library professionals having work experience between 6–10 years, the majority of the respondents replied that professionals in libraries have neither been replaced nor displaced by technology.

7. Discussion

Contrary to the general belief that library professionals in developing countries are inclined to resist technological changes in the workplace, the findings of this study reveal that there is a positive attitude among library professionals in three university libraries in

north India. Since IT applications have increased the accuracy of routine work of library professionals, the majority of the respondents advocated that libraries should adopt new technology as quickly as they can afford to do so. Hence, it would be worthwhile for university authorities to invest more funds in procuring the latest technologies. The study determines a significant correlation between the positive attitude of librarians towards information technology and the potential benefits of computerization of library functions, the accuracy of routine work output, and the personal feelings of professionals while working on computers.

Studies previously conducted by Freudenthal (2001), and Hendrix (2007) found that age and gender were significantly related to librarians' attitudes towards information technology. Divergent to this, no significant difference was found in the attitude of male and female library professionals as majority of them advocated that libraries should adopt new technologies as and when required. Respondents from both genders stressed the need to involve more support staff in planning and decision-making, leading to technological advancement in libraries. Further, no significant relationship between the qualification level of library professionals and their corresponding attitude toward information technology applications was found as they believed that the technological support available in their section was very good. This finding was in line with Dowdy's (2020) research wherein he found that support provided before or during technology implementation were instrumental for librarians to experience an ease of use of that technology.

The study did not find any significant relationship between library professionals' attitudes towards information technology and their experience as library professionals, as most of the respondents advocated that technology application in libraries has improved the accuracy of keeping records, added more responsibility to the library functions and services, and professionals in libraries have neither been replaced nor displaced by technology. The findings of the study are in line with the research conducted by Ramzan et al. (2021), who did not find significance between librarians' information technology attitudes and their experience as librarians.

8. Conclusion

In an era of collaboration and networking, there is a dire need for libraries of higher educational institutions to equip themselves with modern-day technologies to fulfill the mandate of their parent organization, i.e., the creation of new knowledge and dissemination of the existing knowledge. The successful implementation of technological infrastructure in libraries is the outcome of a positive mind set of professionals managing the day-to-day affairs of libraries. Since, a positive attitude towards information technology applications is found among the library professionals of

three university libraries in north India, the services of these libraries are offered based on collaboration and partnership, and this is pretty evident from the current state of technological advancement in these libraries. The study implies that sound technical support for new and existing technologies needs to be available to ensure the successful adoption of technology and that fiscal backing needs to be on board by the immediate authorities.

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Author biography

Dr. Tarvinder Singh Handa obtained his Ph.D. from the Department of Library and Information Science, Punjabi University Patiala. He is presently working as Assistant Librarian at IIT Ropar, Rupnagar- 140001. He has over 20 years of experience working as a library & information professional in various reputed organizations, including his current organization. He has contributed 10 research articles in National and International Journals, 6 book chapters in edited books/conference volumes, and 15 articles published/presented in National and International conferences/seminars/workshops. He has collected and organized the data for this paper.

Dr. Gurpreet Singh Sohal obtained his Ph.D. from the Department of Library and Information Science, Punjabi University, Patiala. He is presently working as Librarian in Goswami Ganesh Dutta S.D. College, Chandigarh. He has collected and organized the data for this paper.

Dr. Jagtar Singh is a Professor & Head, Department of Library and Information Science and University Librarian, Guru Kashi University, Talwandi Sabo-151302, Punjab, India. Besides many awards, he has 10 authored and edited books and 100 papers to his credit. He had successfully guided 15 Ph.D. researchers. He has served as an invited contributor to the UNESCO's "MIL Curriculum for Educators and Learners" in 2021. His areas of interest include LIS education, public libraries, digital libraries, information ethics, media and information literacy, knowledge organization and access management. He has processed and presented the data for this paper.

Corresponding author

Dr. Tarvinder Singh Handa can be contacted at: tarvinder.singh@iitrpr.ac.in