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Abstract

The purpose of the study was to assess users' satisfaction with electronic resources available in university libraries in Punjab, Pakistan. The study adopted the quantitative research method to achieve its objectives. The quantitative data were collected through the questionnaire from library users in eight public universities by employing the convenience sampling technique. The findings of the study reveal that the libraries lacked adequate electronic resources. The respondents were satisfied only with the internet resources. They did not seem satisfied with the rest of the resources as they did not give their opinions about them. The findings of the study will be helpful for the library administration and university authorities to take necessary measures to develop library electronic collections keeping in view users' requirements and expectations in order to meet their information needs in an effective manner.

Keywords: Electronic resources, e-resources, user satisfaction, university libraries, Punjab, Pakistan.

Introduction

In the current era, information and communication technology (ICT) assumes an essential role in the advancement of libraries, and to help improve the quality of services. To provide efficient services to information seekers, electronic resources (e-resources) are considered as an integral part. An information source that provides information (numerical, textual, graphical, pictorial) in an electronic format is known as an electronic resource. The term e-resources are used in a broader sense which may include a number of publishing models, including online databases, electronic journals, electronic books, OPACs, CD-ROMs, print on demand (POD), emails, internet resources, wireless publishing, web publishing and electronic links (Aravind, 2017).

Traditional or manual libraries have changed to a new and advanced form of libraries known as virtual or digital libraries, whereas the hard copies of journals, magazines and books have changed into soft copies of journals, magazines and books or also known as electronic books, digital magazines and e-journals. This has expanded the worldwide dispersal of data. E-resources, for example, e-journals, digital books, e-databases, web resources, e-serials among others are accessible in remote areas through the Web or maybe available offline within the library building (Abinew, 2013). The overflow of information and storage problems are solved with the help of e-resources. E-resources are considered to be the most important tools that harmonize the information in printed format in a traditional library setting (Dadzie, 2005).

The appearance of e-resources is a rising advancement of this age, which is profoundly influencing the scholastic and academic community. The use of e-resources has been enhanced tremendously. Now, researchers have turned out to be dependent on e-resources and embraced these resources as the basic information resources in their academic and research activities (Amjad, 2013). The information seeking behavior of

the scholars and researchers have changed with the advancement of electronic environment as they prefer e-resources for their research and information-seeking (Ollé, 2010).

Literature review

Electronic resources in university libraries

The reviewed literature reveals that a number of research studies have been carried out to investigate the adoption and usage of e-resources in university libraries across the globe. For example, Kelley and Orr (2003) observed that part-time distant students purely relied on e-resources especially internet resources, while the students who took most of their courses face-to-face used print resources to meet their information needs at the University of Maryland University College, USA. Krueger, Ray and Knight (2004) carried out a study to explore awareness and usage of e-resources among undergraduate students at University of the Pacific, USA. They found that although 45% of students were adequately aware of e-resources, only 6% of the students used them to obtain their required information. Fry and Rich (2011) conducted a study to investigate how users locate and choose e-resources through the library website in Bowling Green State University library in Ohio, USA. The study provided suggestions to improve access to e-resources in order to increase the usage of e-resources.

Olle and Borrego (2010) conducted a survey to explore the impact of electronic journals on the information behavior of academic researchers at Catalan universities. They noted that the electronic environment has changed the information-seeking behavior of researchers, and e-resources have turned out to be the most acknowledged resources for researchers to keep themselves abreast of new information in the field. Dadzie (2005) conducted a study to investigate the use of e-resources by students and faculty at Ashesi University, Ghana. The findings of the study showed that

85% of the respondents used e-resources for getting information, while the rest of the users used print resources to obtain information.

Ibrahim (2004) conducted a survey to explore the use e-resources by faculty members at the United Arab Emirates University. He found that the usage of e-resources among faculty members was low due to lack of awareness, time and language barrier. Al-Saleh (2004) undertook a survey to find out the usage of e-resources among students in three universities in Saudi Arabia, i.e. Umm Al-Qura University, King Saud University, and King Fahad University of Petroleum and Minerals. He found that despite widespread availability of e-resources, half of the students used e-resources. Ahmed and Al-Reyaee (2017) conducted a study to investigate the awareness and use of e-resources among medical students at Al-Jouf University in Saudi Arabia. The study found that the students who were aware of the existence of e-resources used e-books' databases more than e-journals' databases. The students who were dissatisfied with available e-resources used general search engines and other universities' databases to meet their information needs. Samarraie (2008) carried out a survey to identify trends among faculty members in utilizing e-resources at Qatar University. The study found that most of the faculty members utilized a wide variety of e-resources to meet their information needs. Asemi and Riyahiniya (2006) undertook a study to investigate the relationship between awareness and the use of digital resources among students in Isfahan University of Medical Sciences, Iran. They found that the majority of students were aware of e-resources and used them for study and research.

Choukhande and Dongre (2004) examined the use of information resources at the Master School of Management Library, Meerut, India. They observed that the users were facing difficulty in searching information via e-resources. Haridasan and Khan (2008) carried out a study to investigate the adoption of e-resources in the National Social Science Documentation Centre library in New Delhi, India. They noted

that the library provided access to a number of online databases. Gupta (2011) carried out a study to analyze the use of electronic journals from the INFONET consortium by faculty and research students at Kurukshetra University, India. The results of the study showed that users depended more on open-source materials than those accessible through INFONET. The respondents also indicated the need for training in using e-resources. Tahir, Mahmood and Shafique (2008) carried out a study to assess the use of e-resources by humanities scholars at University of the Punjab, Lahore, Pakistan. They found that the scholars were still stuck to the printed information resources but they gave great consideration to e-resources.

Users' satisfaction with electronic resources

A number of studies have been undertaken to explore users' satisfaction with e-resources in academic libraries. For example, Waldman (2003) undertook a study to investigate students' satisfaction with e-resources in Baruch College, USA. They discovered that students were faced with a number problems, such as lack of training, university support, access to e-resources, slow speed of the Internet, which hindered the use of electronic resources by students. Ali (2005) conducted a study to explore the use of e-resources among users, and users' satisfaction with e-resources in Indian Institute of Technology library, Delhi, India. They noted that lack of trained staff, printing facilities and computer terminals were the main reasons that prevented users from accessing and using e-resources. Shuling (2006) carried out a study to assess users' satisfaction with e-resources in the Shaanxi University of Science and Technology library, China. The findings of the study revealed that eighty percent of the respondents used e-resources to meet their information needs, and were satisfied with them. Zhang, Ye and Liu (2011) conducted a study to investigate users' information behavior in seven universities in Wuhan, China. They noted that there was a need to improve the quality of e-resources in order to satisfy users' needs effectively.

Egberongbe (2011) investigated awareness and the use of e-resources among faculty members, and the impact of the use of e-resources on their academic productivity in the University of Lagos, Nigeria. The study found that the academic staff were satisfied with e-resources and used the e-resource effectively. Mirza and Mahmood (2012) conducted a survey to evaluate the effectiveness of electronic resources and services in eight general university libraries located in Lahore and Islamabad, Pakistan. They noted that users were satisfied with various e-resources available in the libraries.

Objectives of the study

The objectives of the study are:

1. To identify electronic resources available in university libraries in Punjab, Pakistan.

2. To assess users' satisfaction with electronic resources in university libraries in Punjab, Pakistan.

Research methodology

The study adopted the quantitative research method in order to achieve its objectives. On the basis of the literature review, a questionnaire was designed to collect necessary quantitative data from users (postgraduate students) of libraries in eight public sector universities in South Punjab, Pakistan, i.e. the Islamia University of Bahawalpur, Government Sadiq College Women University, Bahawalpur, Bahaud din Zakariya University, Multan, Women University, Multan, Muhammad Nawaz Sharif Agricultural University, Multan, Muhammad Nawaz Sharif Engineering and Technology University, Multan, Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan and Ghazi University, Dera Ghazi Khan. The study employed the convenience sampling technique to collect data from the respondents.

<h1 style="text-align:center;">Data analysis</h1>

The quantitative data gathered through the questionnaire were entered into IBM SPSS, Statistics, version 20 to analyze the data. The descriptive statistics (i.e. means, frequencies, percentages, and standard deviation values) have been used to analyze and describe the data. The data are analyzed and presented under the following sections.

Response rate

A total of eight hundred questionnaires (100 in each university) were distributed among library users in eight public sector universities in South Punjab, Pakistan. Out of 800 respondents who were delivered the questionnaires, 667 respondents filled and returned the questionnaire with a response rate of 83 percent (Table 1).

Table1: Response rate by institution (N=667)

University	Frequency	Percentage
Women University, Multan	100	15.0
The Islamia University of Bahawalpur.	98	14.7
Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan	97	14.5
Government Sadiq College Women University, Bahawalpur	92	13.8
Bahaud din Zakariya University, Multan	82	12.3
Muhammad Nawaz Sharif Agricultural University, Multan	71	10.6
Muhammad Nawaz Sharif Engineering and Technology University, Multan	67	10.0
Ghazi University, Dera Ghazi Khan	60	9.0
Total	**667**	**100.0**

Respondents' gender

Among 667 respondents, 371 (55.6%) respondents were female and 296 (44.4%) respondents were male. (Table 2).

Table 2: Respondents' gender (N=667)

Gender	Frequency	Percentage
Female	371	55.6
Male	296	44.4
Total	**667**	**100.0%**

Respondents' age group

As regard respondents' age groups, the majority of the respondents 349 (52.3%) were between 20-25 years of age, 139 (20.8%) between 26-30 years of age, 129 (19.3%) respondents were below 20 years, 32 (4.8%) between 31-35 years of age, 13 (1.9%) between 36-40 years of age and 5 (.7%) respondents were above 40 years of age (Table 3).

Table 3: Respondents' age groups (N=667)

Age Group	Frequency	Percentage
20-25 years	349	52.3
26-30 years	139	20.8
Below 20 years	129	19.3
31-35 years	32	4.8
36-40 years	13	1.9
Above 40 years	5	0.7
Total	**667**	**100.0**

Respondents' program of study

Out of 667 respondents, the majority of the respondents 482 (72.1%) were undertaking a Master's degree program, 157 (23.5%) were doing MPhil and 29 (4.3%) Ph.D. in different subject areas (Table 4).

Table 4: Respondents' program of study (N=667)

Program of study	Frequency	Percentage
Masters	481	72.1
M.Phil	157	23.5
PhD	29	4.3
Total	**667**	**100.0**

Duration of library use

The respondents were asked to indicate how long they had been using their university libraries. Amongst 667 respondents, the majority of the respondents 171 (25.65%) had been using the libraries for 2 years, 170 (25.5%) for 1 year, 148 (22.2%) less than 1 year, 93 (13.9%) for 3 years, 50 (7.5%) for 4 years, 19 (2.8%) more than 5 years, 16 (2.4%) for 5 years (Table 5).

Table 5: Duration of library use by users (N=667)

Duration	Frequency	Percentage
2 years	171	25.6
1 year	170	25.5
Less than 1 year	148	22.2
3 years	93	13.9
4 years	50	7.5
more than 5 years	19	2.8
5 years	16	2.4
Total	**667**	**100.0**

Purpose of using the library

The participants were asked to indicate the purpose of using the library. Amongst 667 respondents, the majority of the respondents 282 (42.3%) informed that they used the library for study, 147 (22%) for preparing class assignments, 141 (21.1%) for research, 64 (9.6%) for updating knowledge, 17 (2.5%) for recreation, 11 (1.6%) for professional development, while 5 (.7%) respondents reported that they used the library for some other purposes (Table 6).

Table 6: Purpose of the library use (N=667)

Purpose	Frequency	Percentage
Study	282	42.3
Class assignment	147	22.0
Research	141	21.1
Update knowledge	64	9.6
Recreation	17	2.5
Professional development	11	1.6
Other	5	0.7
Total	**667**	**100.0**

Electronic resources in libraries

The respondents were asked to give their opinions about availability of various electronic resources in their respective libraries by using a five-point Likert scale (1=Not available, 2=Slightly available, 3=Moderately available, 4=Adequately available, 5=Extremely available). The respondents were of the view that their libraries had a moderate level of availability of Internet resources (M=3.45, SD=1.238), HEC digital library (M=3.33, SD=1.362), electronic journals (M=3.13, SD=1.273), online newspapers (M=3.10, SD=1.314), electronic books (M=3.10, SD=1.299), online

databases (M=3.07, SD=1.259). Whereas, they considered that Online Public Access Catalogue (M=2.5, SD=1.222), electronic research reports (M=2.56, SD=1.220), electronic theses and dissertations (M=2.52, SD=1.260), audio/visual resources (M=2.50, SD=1.200), online indexes and abstracts (M=2.48, SD=1.190), portals (M=2.45, SD=1.121) and tutorials (M=2.45, SD=1.184) were slightly available in the libraries (Table 7).

Table 7: Availability of electronic resources in libraries (N=667)

Sr. No	Electronic resources	N	Mean	SD
1	Internet resources	667	3.45	1.238
2	HEC digital library	667	3.33	1.362
3	Electronic journals	667	3.13	1.273
4	Online newspapers	667	3.10	1.314
5	Electronic books	667	3.10	1.299
6	Online databases	667	3.07	1.259
7	Online Public Access Catalogue (OPAC)	667	2.58	1.222
8	Electronic research reports	667	2.56	1.220
9	Electronic theses and dissertations	667	2.52	1.260
10	Audio/visual resources	667	2.50	1.200
11	Online indexes and abstracts	667	2.48	1.190
12	Portals	667	2.45	1.121
13	Tutorials	667	2.45	1.184

Satisfaction with electronic resources

The participants were asked to give their opinions regarding their satisfaction with various electronic resources in their respective libraries by using a five-point Likert scale (1=Very dissatisfied, 2=Dissatisfied, 3=Neutral/No opinion, 4=Satisfied, 5=Very satisfied). The researchers considered the respondents to be satisfied with those e-resources which have mean score of 3.5 or above. As shown in table 8, the respondents were satisfied

only with the internet resources (M=3.51, SD=1.166), while the majority of the respondents did not give their opinions about HEC digital library (M=3.47, SD=1.178), electronic journals (M=3.34, SD=1.178), online newspapers (M=3.33, SD=1.153), electronic books (M=3.30, SD=1.114), online databases (M=3.17, SD=1.138), Online Public Access Catalogue (M=2.90, SD=1.077), electronic research reports (M=2.87, SD=1.081), online indexes and abstracts (M=2.83, SD=1.043), electronic theses and dissertations (M=2.81, SD=1.101), audio/visual resources (M=2.79, SD=1.038), portals (M=2.74, SD=1.014) and tutorials (M=2.74, SD=1.064).

Table 8: Respondents' satisfaction with electronic resources (N=667)

Sr. No	Electronic Resources	N	Mean	SD
1	Internet resources	667	3.51	1.166
2	HEC digital library	667	3.47	1.178
3	Electronic journals	667	3.34	1.178
4	Online newspapers	667	3.33	1.153
5	Electronic books	667	3.30	1.114
6	Online databases	667	3.17	1.138
7	Online Public Access Catalogue (OPAC)	667	2.90	1.077
8	Electronic research reports	667	2.87	1.081
9	Online indexes and abstracts	667	2.83	1.043
10	Electronic theses and dissertations	667	2.81	1.101
11	Audio/visual resources	667	2.79	1.038
12	Portals	667	2.74	1.014
13	Tutorials	667	2.74	1.064

T-test was performed to determine the difference between the opinions of male and female participants with regard to their satisfaction with e-resources. No significant difference between the opinions of male and female participants was found about their satisfaction with e-resources with the significant value of 0.778 (Table 9).

Table 9: Result of t-test regarding respondents' satisfaction with e-resources with respect to gender

Statement	N	Gender	Mean	t	Sig.
Users' satisfaction with electronic resources	296	Male	40.8682	2.457	.778
	371	Female	38.9407		

Major findings and discussion

The introduction and developments of ICT into libraries have drastically changed both the way the information is created, preserved, and disseminated, and the way users prefer to access and use the information. It has also affected information sources by transforming them from paper to electronic media. The flood of information, expansion of knowledge and research, and changing concepts regarding information sources have obliged all types of libraries to provide information to users in electronic form as it enhances speed, convenience and accessibility. E-resources have now become an integral of the library collection. The findings of the present study suggest that various e-resources, such as internet resources, HEC digital library, electronic journals, online newspapers, electronic books, online databases were moderately available in academic libraries. Whereas, Online Public Access Catalogue, electronic research reports, electronic theses and dissertations, audio/visual resources, online indexes and abstracts, portals and online tutorials were slightly available in the libraries. The respondents seemed to be satisfied only with the internet resources, while the majority of the respondents did not give their opinions about other e-resources. There was no significant difference between the opinions of male and female participants about their satisfaction with e-resources available in the libraries. The libraries need to enhance their electronic collections by subscribing to more e-resources keeping in view

users' needs and expectations, so that users can meet their information needs effectively.

Conclusion

The study aimed to assess users' satisfaction with e-resources in university libraries in Punjab, Pakistan. In order to achieve objectives of the study, the quantitative research method was adopted. The quantitative data were collected through the questionnaire from users of eight public university libraries by employing the convenience sampling technique. The results of the study reveal that the academic libraries did not have adequate e-resources. The majority of the respondents did not seem satisfied with e-resources available in the libraries. The libraries need to enhance their e-resources. The findings of the study will be helpful for the library administration and university authorities to take necessary measures to develop library electronic collections keeping in view users' requirements and expectations in order to meet their information needs in an effective manner.

Recommendations

The following recommendations are made:

1. The university authorities should enhance libraries' budgets to enable them to acquire more e-resources and improve ICT infrastructure.

2. The academic libraries should allocate a considerable amount of funds for e-resources in their budgets and spend that amount regularly on the acquisition of e-resources.

3. The libraries need to enhance their electronic collections by subscribing to more e-resources keeping in view users' needs.

4. The libraries should enhance their ICT infrastructure including computers, internet connectivity, Wi-Fi, so that users can use e-resources effectively.

5. The libraries should design and arrange training sessions for users to develop their digital literacy skills to enable them to search and retrieve their required information easily.

6. The libraries should publicize their e-resources through some effective marketing strategies in order to make users aware of the resources and their benefits.

7. The libraries should provide necessary training to their staff handling e- resources to enable them to manage the e-resources efficiently.

8. The libraries should make arrangements for an alternative source of electricity in order to cope up with frequent power outages in the country to ensure an uninterrupted access to the e-resources.

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