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Abstract

This research aimed to investigate the current status and online services portfolio of web OPACs and barriers users' face while searching information on web OPACs of public and private sector university libraries in Lahore. The inquirer adopted quantitative survey method and distributed self administrated (peer reviewed and pilot test) questionnaire among 425 library users who were selected using stratified convenient sampling technique. This study illustrated various types of service being offer and uncovered number of barriers and redundancies that users' of public and private sector university libraries face while searching information remotely on web OPACs. This research study would benefit library administrators and web OPAC designers in the make web OPACs more effective.

Keywords: Barriers in searching OPAC; OPAC; web OPAC; web OPAC services

Introduction

Technologies of all types have made human life comfort at every level. These are the technologies that have transformed everything, made things easy to do, established un-endable

processes, accuracy, and efficiency in all the works in all the fields. Libraries are also among those fields that apply technologies in them to facilitate their customers. Libraries use computers and allied technologies to form continuity in operation 24/7 a week. Online public access catalogue is one of an important technology that libraries apply to provide access to library users' on distance to what a library or group of libraries hold. Before 1980s, traditional/conventional libraries shared their products and services manually. These products and services were restricted because of their physical existence (Songhui, 2008). Libraries first introduced Online Public Access catalogue (OPAC) that were available locally, through LANs and eventually developed Web OPAC that was new approach to the modernization in the OPAC (Mahmood, 2008). The web OPAC is a gateway to library collection and consortia of libraries through World Wide Web.

World Wide Web online Public Access catalogue (Web OPACs)

Rapid growth and advancement in computing technologies result the use of information and communication technologies everywhere. These are the information & communications technologies (ICT) that is proved and accepted as fastest sources of information communication, information capturing and sharing local as well as remotely. By the mid of 1980s libraries, especially belong to Academic institutions initiated adopting modern technologies. At the first libraries shifted their manual operations to computer for fast and un end able library operations and thus the invention of World Wide Web (www/web) amazingly turned libraries' information sharing behavior remotely. Now the Libraries of all type use World Wide Web (www/web) to share their services beyond the physical existence. Web OPAC possibly be the third and next generations of OPACs on world wide web network where it provide access to information from anywhere, everywhere and on any device not just on computer terminal.

Web OPAC features and functions

Libraries across the world with the application of ICTs, expend their services through web technologies. These established 24/7 information retrieval of library collection remotely that was limited just before the application of web technologies in libraries, initiated providing bibliographical information by different elements such as to locate document with particular author, title, subject ISBN/ISSN with other key-word as possible, expended search options to

make broader or narrower by using Boolean operators (and, or, not), allowed the use of truncations while searching information putting Truncation symbols in search (i.e. *left truncation, Right truncation*, truncation in *middle) hos*=hospital, *hospital= hospitality etc., Range search (i.e. = from 200 to 1000), Word proximity (nearest Time, Relation, synonym etc., allows user to filter the search by Year of Publication for example (edition 2012, Chicago edition etc.), by Language e.g. Urdu, Punjabi, or other oriental language, Form of appearance e.g. CD, DVD, serials or other form (Sarma, 2016), browsing facilities by document cover, pages and so on, new arrival updates that means all about the new collection that a library acquire, allow online reservations, online book renewal facility, online book transfer from one account to the account of the patron, regular transaction updates account history about the transactions performed by user, virtual shelves web OPAC allows and allocate virtual space to create his own library by saving bibliographical information of documents into it and retrieve whenever he need, the web OPAC provide access to multi users at the same time and all the facilities without discrimination and multidimensional search, it supply the information that a user is search into the collection whether is available or issued to other user availability check, allows user to share, email, save, cite, or copy document information, provide Links to databases (i.e. HEC digital library etc.), Search assistance while searching information on web OPAC remotely, provision of Library Web OPAC access on mobile devices (Joint, 2007) (e.g. mobile/tabs and other portable devices, global access and many more (Liu, 2010; Mahmood, 2008).

Statement of the problem

Online public access catalogue is an interface for all the activities that are carries out to achieve the goals of libraries (Guha & Saraf, 2005). The web OPAC broaden access to the library offerings through World Wide Web to their users (Zainal & Sa'don, 2013). Libraries use web OPACs to provide remotely access to information resources and facilitate users in their assignments. Thus it is ascertained from the extent of literature that not a single study have been conducted so far that investigate the current status and online services portfolio and identify the barriers that users face while searching information on web OPAC public and private sector university libraries in Pakistan. Therefore, this empirical research will do so.

Objective of the study

1. To find out current status and online services portfolio of web OPACs in libraries of the universities of Lahore.
2. To ascertain barriers and redundancies that users face while searching catalogue remotely.

Research Questions

This study was designed to make a deliberate effort to answer the following research questions:

1. What is current status and online services portfolio of web OPAC services in libraries of the universities in Lahore?
2. What are the barriers /redundancies, faced by library users while searching through web OPACs remotely?
3. What are the difference in users' responses on the barriers /redundancies, faced by public and private sectors university library users?

Review of related literature

Ndumbaro (2018) investigated the use of library online public access catalogue (OPAC), to see causes behind success and failure in search results. The researcher used log analysis method to assess the usefulness of Library OPAC. The results of the study revealed that author, subject, and title of the documents is preferred to retrieve information. moreover, the study added reason behind failure of the result is misspelled entered query, search inappropriate field, users lack of knowledge, and syntax also effect unsuccessful results.

Wu, Liang, and Bi (2018) conducted a study to understand the cross device OPAC searches characteristics and query reformulation patterns during device transformation. The approach used in the research study was six months log quantitative analysis in university library to evaluate the richness of vocabulary, use of specific terminologies in searching, query reformulation and query divergence. The study finds that PC-PC transition is significant in device transition, time break of device and web search transition is different, rapid transition found on web thus short device transition occurs in daytime and number of users prefer to search same field.

Papadakis, Stefanidakis, and Tzali (2008) studied user centred and proficient navigation procedure OPAC based on semantic subject heading. The approach used in this study is AJAX technology and web programming language. Study revealed that graphical user interface (GUI) shows hierarchy in subject headings that attract users and helps them in formulating queries moreover study identify that multiple paths for information extracting enable researchers to meet their needs efficiently and ideally.

Sarma (2016) illustrated comparison of facilities provided by different integrated library management software versions and OPAC modules. The researcher reviewed previous studies and he self-practiced. The study concludes that OPACs of all the software provides similar facilities like log-in, books search, profile/transaction information, documents reservation and hold facility, book suggestion and comment box etc.

McMullen and Gray (2012) discussed the implementation of Current awareness services for informing Liaison librarians and teaching faculties from library acquisitions. This study used specific method for adding MARC, Z39.50 and other contents by using HTML, java scrip programming language to provide current awareness service. The study found that there are 24 departments and each is provided their own web page that arranges titles alphabetically. And it is also seen that current awareness services is much useful on OPAC because it provide hyperlinks to other information needed for faculty to see the orders placement and information of librarian about collection development. On OPAC are very useful that provide hyperlinks.

Brad Eden, Denholm, Kauler, Lavelle, and Sokvitne (2009) explored the initiative for the development of new generation OPACs. The researcher consulted and gained feedback for the development of OPAC. in this study he knew the process of OPAC exploration by consulting users and getting feedback from them. He found that OPAC is not competent if do not provide relevant document easily and get reached them physically. And keeping pace with contemporary need, it will require constant concentration.

Bradford Eden and Powell (2008) discussed the integrations of materials locally digitized in cooperation with Google to library OPAC. The study conducted on the strategies adopted while integrating digital resources metadata into OPACs. The study finds that the level of

automation is required like metadata formats, data entering methods etc, minimal errors ratio and OPAC integrations is also should be with locally digitized resources.

Joint (2007) suggested the effectiveness of URL compatibility with OPAC in making library OPAC according to contemporary users. The researcher in this research used analysis of literature and statistics available on OPACs. The study shows that associating URLs on OPAC increases the use of OPAC; it added value to library stacks, circulation, stock use and makes libraries' OPACs successful searching tool.

LaBarre (2007) studied for adding OPAC visage navigation and browsing options for helping scholarly information locating. The research method in this study consists on browsers, OPACs and users consultations. The study reveals that system evaluation, experimental features, additions of features that are in common on devices and critical analysis of scholarly requirements is required to assist scholarly search with OPAC.

Bennett (2007) examined the effects of redesigning OPAC on circulation and resource sharing. the researcher adopted statistical data comparative method for comparing data collected from 16 libraries. The study demined that users inter library loan options used after redesigning OPAC but the redesigning OPAC does not seem effective in circulation.

Niu (2014) conducted study to provide researchers effective faceted search and resources over OPAC. The researcher review various faceted feature of OPAC and collected data from OPACs' search history. The study shown that most of users know the facets to locate information easily thus users use faceted search as a supplementary search option and they use searching by facets very often on OPACs

Use of OPAC

Fabunmi and Asubiojo (2013) attempted to investigate to measure the understanding and use obafemi awolowo university library OPAC. The research was conducted on quantitative base and a survey method applied to collect data from 800 respondents. The study highlights that there is 68% presents of OPAC users are aware and high rate of aware students do not use OPAC, only 3.2 % hostiles users us OPAC and 2 % just from homes thus most of users like to

search information via manual catalogue. Moreover the study finds factor leading less use of OPAC are irregular power supply, network failure and computer terminals inadequacy etc.

Bansal and Kumar (2017) conducted a case study on the use of OPAC Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana. Questionnaire Survey research method is used to collect data. The researcher studied various aspects of OPAC like use of OPAC, satisfaction of user with OPAC. the results reveals by the study that there were very low satisfaction among the users regarding use of OPAC.

Hofmann and Yang (2012) derived results for the use of next generation OPAC and information discovery tools of academic libraries. The researcher collected data by visiting OPACs of 260 academic institutions that offer OPAC across USA and Canada. The researcher concluded that there are only 75 institution included in the study that offer discover tools such as world cat, EBSCO, Primo, VU finds, OCLC etc. but do not provide easy access to them due to OPAC interfaces and most of visited OPACs found traditional.

Villen-Rueda, Senso, and de Moya-Anegón (2007) investigated the use of OPAC in academic institution. The researcher used computer generated records analysis to seek out results of the study. In this study it is found that users often prefer to search by Title in OPAC and very few attempts to search by subject. It also seen that educational faculties such as professors search dynamically in the OPAC searching fields and searching information via different elements depends on nature of information desired.

Dinet, Favart, and Passerault (2004) explored the impact and use of Boolean operators on information searching through OPAC. The results of the study sought out by analysing logs of transactions with OPAC. the study disclose that OPAC users do not used Boolean Operators frequently, the Boolean operator are used according to expertise of users during information search due to use of procedural language in them

World Wide Web online Public Access Catalogue (Web OPAC)

Mahmood (2008) assessed indigenously developed web OPAC of academic, special and national libraries of Pakistan in terms of facilities offered by these web OPACs. The functions and facilities such as: Links to resources, links to full text, help availability for searching, modern search methods in OPAC etc. the research. The researcher used mix method and

collected data by making survey from 16 libraries on 91 check list and the results of study drawn by analysing internet accessible indigenous developed web OPAC. The findings of the study shown that indigenous developed web OPACs provide very basic services than the web OPACs of other countries. The OPACs provide convenient search methods, very poor search limits, and strategies, access points, combined search options, does not provide MARC support, no displaying bibliography sorting, not transaction report, not supported Z39.50, lack of guidance for user on OPACs, navigations options not as of browsers, labels, layouts, and general points also found not well developed.

Khurshid and Ahmed (2007) explored the differences between OPAC and Library portals to improve users' access to the wide range of library holding. He assesses the existing literature on Web OPAC. The extracted results of the study shows the library portal is an extension of web OPAC which provide extra features and capabilities in terms of information retrieval.

Web OPAC features

Babu and o'Brien (2000) studied the different features and functions of web OPAC. he explained that web OPAC is a second generation OPAC consists of all the traditional feature and some additional new feature also such as external links to sources, accessible via internet, 24/7 accessibility to resource, provide graphical, is cable to get accessed user to all the electronic resources.

Madhusudhan and Aggarwal (2011) in their paper investigated various features and components of web OPAC. The features and components includes broad categories for search features, search limits and strategies, access points, bibliographic displays, output/services/facilities, external links, user assistance, page layout, labels, text display, session filters and general features of web based OPAC. Quantitative approach used with luong liew check list with dichotomous questions used to evaluate six Indian IT institutes web based OPAC.. The study shown only web page layout got 93.1 percent average score, 90% general features categories, and filtered category could secured 40.47% percent score. The results shows only 50% percent web OPACs crossed above 50% score and almost all the web OPAC found lack assistive in spell check, adjunct thesaurus and federated search.

Web OPAC services

(Mulla & Chandrashekara, 2009) discussed in his study on web OPAC facilities, different services offered purpose and utilization of web OPAC by user to suggest measures in web OPAC effectiveness. Survey method is used to collect data on questionnaire from 1716 faculty, students and researchers. The findings of the study reveals that web OPAC is a useful tool for information locating remotely, users of web OPAC need web OPAC orientation for the use of library web OPAC to overcome difficulties while retrieving documents it is required to examine the utilization and satisfaction of user from web OPAC.

Research methodology and procedure

This quantitative research adopted survey method and gathered data on self-administrated (peer reviewed pilot tested) questionnaire that contained two parts: participants' demographic information and statements on research objectives. The sample of present research was composed of 480 conveniently selected library users' from two stratum (Public and private sector university libraries of Lahore division of Punjab). The researcher in-person visited 16 university libraries of Lahore and distributed 30 questionnaires in each university total 480 (100%) which returned 425 (88.54%) complete usable responses. The collected data was analysed by using SPSS and interpreted then.

Results and discussions

Type of University

The data (table 1.) shows the types of universities selected for the study. There were 5 (31.25%) that use web OPACs from Public sector universities and 11 (68.75%) from private sector that were selected in the research study.

Table 1.

Type/Sector of Universities (n=16)

Type/ sector of Universities	Frequency	Percentage
Public	5	31.25

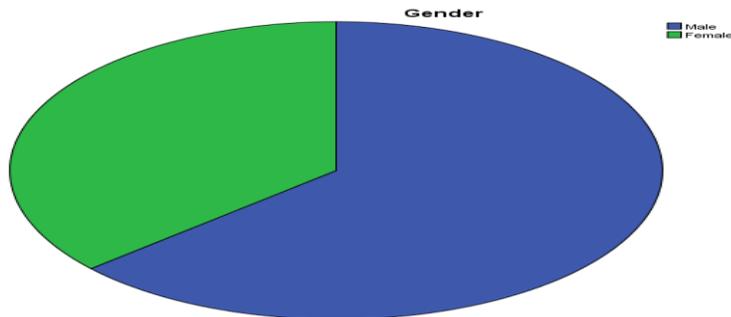
Private	11	68.75
Total	16	100

4.1.2 Gender of Respondents

The collected data (table 2) displays gender of respondents from both public and private sector university libraries. There were total 425 respondents, 270 (63.5%) were male and 155 (36.5%) female respondents participated in this study.

Gender (n=425)

Gender	Frequency	Percentage
Male	270	63.5
Female	155	36.5
Total	425	100



Respondents level of education and employment

This (Table 3) shows Respondents' level of education and association with universities. There were 329 (77.4%) undergraduate students, 80 (18.8%) were studying in postgraduate programs, 2 (.5%) from faculty members and 13 (3.1%) represented administrative staff of the universities.

Respondents level of education and employment (n=424)

Respondents level of education and employment	Frequency	Percentage
-----------------------------------------------	-----------	------------

Undergraduate	329	77.4
Post graduate	80	18.8
Faculty members	2	.5
Administrative staff	13	3.1
Total	424	100

Services offered by your library on web OPAC

(Table 4) displays frequency of the responses by web OPAC users on document access points. The table shows that 400 (94.1%) web online public access (OPAC) users had document search facility with Author, 25 (5.9%) users responded that they had no access to documents search by author, 401 (95.0%) Respondents responded that there was search provision with title on web OPAC, while 21 (4.9%) participants responded no, 382 (89.9%) participants responded that there was search provision with subject and 38 (8.9%) respondents said no, there was documents search facility with ISBN/ISSN 273 (64.2%) respondents responded and 142 (33.4%) said no access. 268 (63.1%) web OPAC users responded that there was provision to search documents with other keywords, thus 150 (35.3%) respondents said no.

Table 4 *Does your library web OPAC provide searching with following access points for finding information?(n=424)*

Advance search options/ search strategies

Statement	Frequency		Percentage		Total
	Yes	No	Yes	No	
By Author	400	25	94.1	5.9	425
By Title	401	21	95.0	4.9	422
By Subject	382	38	89.9	8.9	420
By ISBN/ISSN	273	142	64.2	33.4	415
By other keywords	268	150	63.1	35.3	418

Table 5 findings that 266 (62.6%) web OPAC users are provided advance search options AND, OR, NOT for searching information online, 150 (35.3%) users responded no, 241(56.7%) responses came with Yes in searching information online with Truncation symbols while 172 (40.5%) users responded with no, 313 (73.6%) respondents said that they had provision to use range search option and 103 (24.2%) participants responded no, 309 (72.7%) web OPAC users answered that they had word proximity assistance while searching information online and 108 (25.4%) responded no.

Table 1 *Does your library web OPAC provide you advance search options/ search strategies*

Statement	Frequency		Percentage	
	Yes	No	Yes	No
Boolean Operators/ Logic (And, OR, Not) [example: Hospital AND, OR, NOT patient.	266	150	62.6	35.3
Truncation symbols in search (i.e. *left truncation, Right truncation*, truncation, middle* truncation) hos*=hospital, hospital*= hospitality etc	241	172	56.7	40.5
Range search (i.e. = from 200 to 1000)	313	103	73.6	24.2
Word proximity (nearest Time, Relation, synonym etc.)	309	108	72.7	25.4

Search filter/ search limits

Table 6 exhibits search filters and search limits. The frequency shows in this table that 349 (82.1%) web OPAC users have options to limit the search while searching documents by edition, 71 (16.7%) users answered with no, 299 (70.4%) respondents said yes for the provision of limit the documents with their language such as with Urdu, Punjabi, and with other languages, 123 (29.1%) responded no, 293 (68.9%) participants responded that they do have provision to limit the search with CD, DVD, Book serials and other forms.

Table 2 *Does your library web OPAC allow you to filter search/ limit the search results*

Statement	Frequency		Percentage	
	Yes	No	Yes	No
Year of publication for example (edition 2012, 3 rd edition etc.)	349	71	82.1	16.7
Language e.g., Urdu, Punjabi, or other languages	299	123	70.4	29.1
Form of appearance e.g., CD, DVD, book, serials or other form	293	127	68.9	29.9

Multifactor services on web OPAC

Table number 7 revealed users responses on multifactor services that are provided through the web OPAC 354(83.3%) respondent response they have the facility of online browsing, 69(16.2%) respondent said no. 283(66.6%) respondent response they have facility to transfer their books online and 142(33.4%) respondent response they have no such facility. 330(77.65%) respondent response they update their profile information and 93(21.9%) respondent response no regarding the profile update. 333(78.4%) respondents response they have facility to check his/her account history online whereas 88(20.7%) respondents response no. 344(80.9%) respondents response are yes regarding the online availability of documents and 79(18.6%) respondent response are no. Regarding the facility of on line document reservation 319(75.1%) respondent response they avail that facility and 101(23.8%) respondents response no regarding this. 315(74.1%) respondent response that they have facility to renew book online while 110(25.9%) respondents response they have no facility of online renewal. 311(73.2%) respondents response are in yes regarding the provision of new arrival updates through online communication and 112(26.4%) respondents response are in no. 262(59.3%) respondent response they have facility to create their own library on virtual space/ Cloud space and 165(38.8%) respondents response they have no provision of such facility. 327(76.9%) respondents response they share, save and copy the bibliographical information of documents and 91(21.4%) respondent said no. 327(76.9%) respondents response they have facility of HEC digital library and other databases while 91(21.4%) respondent response are no regarding the availability of Databases. Regarding the availability of web OPAC on mobile devices like phone, tabs and other portable devices

272(64.0%) respondents response are in yes an 128(30.1%) respondent says they have no facility to use web OPAC on their mobile devices.

Table 3 *Does your library web OPAC provide you following (multifactor) services?.(n=424)*

Statement	Frequency		Percentage	
	Yes	No	Yes	No
Online browsing facility?	354	69	83.3	16.2
Online book transfer facility?	283	142	66.6	33.4
Updating your profile information?	330	93	77.6	21.9
Checking your account history online?	333	88	78.4	20.7
Online document availability check?	344	79	80.9	18.6
Online document reservation/ hold on?	319	101	75.1	23.8
Online book renewal?	315	110	74.1	25.9
Provide new arrivals update through online communication, e.g., email?	311	112	73.2	26.4
Virtual space/cloud storage to create your own online library?	262	165	59.3	38.8
Allow you to share, email, save, cite, or copy document information	327	91	76.9	21.4
Links to databases (i.e. HEC digital library etc.)	327	91	76.9	21.4
Search assistance while searching information on web OPAC	298	111	70.1	26.1
Library web OPAC access/compatibility with mobile devices (e.g. mobile phone/tabs and other portable devices)	272	128	64.0	30.1

Barriers and redundancies in using library web OPAC

Respondents were asked about the problems and redundancies that they had faced during the use of web OPAC. Results taken from collected data (reference Table 8) show that 60

(14.1%) users answered that they always faced problem to locate search boxes due to mess of information availability on OPAC interface, 74 (17.4%) often faced the same problem, 125 (29.4%) faced this problem sometimes, 46 (10.8) seldom faced the same problem and 118 (27.9%) respondents never faced problem to locate search boxes on web OPAC. Data has also shown that 70 (16.5%) web OPAC users always faced connectivity and internet speed problems, 90 (21.2%) often faced the same problem, 129 (30.4%) faced this problem sometimes, 69 (16.2%) seldom faced the same problem and 66 (15.5%) never faced connectivity and internet speed problem. Web OPAC users who always faced problem of internet browsers and device compatibility issues were 52 (12.2%), 84 (19.8) often faced the same problem, 130 (30.6%) faced this problem sometimes, 56 (13.2%) seldom faced the same problem and 101 (23.8%) never faced browser and device compatibility problem. It has been ascertained through collected data that 43 (10.1%) web OPAC users responded that they always face problems in filtering information due to overload of information and difficulty in information retrieval by web OPAC, 93 (21.9%) often faced this problem, 109 (25.6%) faced the same problem sometimes, 74 (17.4%) seldom faced it, whereas, 105 (24.7%) users never faced any problem in filtering information due to overload of information. Web OPAC users on skills and knowledge regarding use of OPAC 48 (11.3%) replied that they always faced difficulty due to lack of skills and knowledge, 77 (18.1) often faced the same problem, 135 (31.8%) faced the same problem sometimes, 45 (10.6%) seldom faced the same problem and 119 (28.0%) web OPAC users never faced difficulty due to lack of skills and knowledge. Collected data shows that 34 (8.0%) users always faced problem while searching information remotely due to lack of assistance in remote use of web OPAC, 85 (20.0 %) often faced the same problem, 120 (28.2%) faced the same problem sometimes, 64 (15.1%) seldom faced this problem and 122 (28.7%) never faced this type

of problem. Question relating to spelling errors in searching string while retrieving documents, 37 (8.7%) users always faced this problem, 59 (13.9%) often faced the same problem, 133 (26.6%) faced it sometimes, 65 (15.3%) seldom faced the same problem and 147 (34.6%) never faced problems of spelling error in search on web OPAC. Data also shows that 35 (8.2%) web OPAC users always experience syntax errors, 70 (16.5%) often faced the same problem, 120 (28.2) faced the same problem sometimes, 62 (14.6%) seldom faced this same problem while 132 (31.1) users never faced syntax errors during searching information on web OPAC. Users on web OPAC page navigation, 33 (7.8%) responded it was always difficult to understand navigation keys, 65 (15.3%) often faced the same problem, 105 (24.7%) faced the problem sometimes, 80 (18.8%) seldom faced the same problem and 141 (33.2%) never found any difficulty in navigating up, down, left or right in the process of information retrieval on web OPAC.

Table 8 *The barriers and redundancies faced in searching (n=423)*

Statement	Always	Often	Sometimes	Seldom	Never
	F %	F %	F %	F %	F %
It is difficult to locate search boxes due to mess of interface information	60 (14.1)	74 (17.4)	125 (29.4)	46 (10.8)	118 (27.9)
I face connectivity problem such as low internet speed	70 (16.5)	90 (21.2)	129 (30.4)	69 (16.2)	66 (15.5)
Web OPAC browser and device compatibility (e.g. mobiles/tabs and other portable devices)	52 (12.2)	84 (19.8)	130 (30.6)	56 (13.2)	101 (23.8)
Overload of information and difficulty in filtering information retrieved by OPAC	43 (10.1)	93 (21.9)	109 (25.6)	74 (17.4)	105(24.7)
Lack of skills and knowledge cause difficulty in searching web OPAC	48 (11.3)	77 (18.1)	135 (31.8)	45 (10.6)	119 (28.0)
Lack of assistance while using web OPAC remotely	34 (8.0)	85 (20.0)	120 (28.2)	64 (15.1)	122 (28.7)

Spelling error in searching documents	37 (8.7)	59 (13.9)	113 (26.6)	65 (15.3)	147 (34.6)
Syntax errors such as search for Chamorro (whether it is name of car or animal or something else).	35 (8.2)	70 (16.5)	120 (28.2)	62 (14.6)	132 (31.1)
Un understandable page navigations (i.e. Up and down, left and right page)	33 (7.8)	65 (15.3)	105 (24.7)	80 (18.8)	141 (33.2)

Barriers and redundancies users face while searching on library web OPAC

The independent sample t-test applied on collected data from respondents has been described here (as shown in table 9) for barriers and redundancies that user faced while searching on web OPAC. The T-test results exhibit that there was no significant difference in the users opinions of both groups of public and private sector universities regarding “*difficulties to locate search boxes due to mess of interface information*” (Sig=.259).Furthermore, “*facing connectivity problem such as low internet speed*” (Sig=.637-); “*Web OPAC browser and device compatibility (e.g. mobiles/tabs and other portable devices)*” (Sig=.342-). No factor has been found with significant difference between both of samples (of public & private universities) relevant to the problems and barriers that had been faced by respondents in the use of web OPACs. Combined factors data comparison employing independent sample t-test also revealed that there was no significant difference (Sig=.026) in the problems and redundancies faced by the users of public sector universities in comparison with their counterparts in private sector universities (Sig=.417-).

Table 9 Comparison between samples on barriers and redundancies faced web OPAC users

SR#	Statements	Public sector university (n=5)		Private sector university (n=11)		t-test Sig (2-tailed)
		Mean	SD	Mean	SD	

1	It is difficult to locate search boxes due to mess of interface information	2.90	1.239	2.75	1.446	.259-
2	I face connectivity problem such as low internet speed	3.11	1.186	3.05	1.329	.637-
3	Web OPAC browser and device compatibility (e.g. mobiles/tabs and other portable devices)	2.74	1.262	2.87	1.350	.342-
4	Overload of information and difficulty in filtering information retrieved by OPAC	2.83	1.311	2.72	1.319	.432
5	Lack of skills and knowledge cause difficulty in searching web OPAC	2.82	1.332	2.71	1.346	.480
6	Lack of assistance while using web OPAC remotely	2.79	1.278	2.57	1.305	.106-
7	Spelling error in searching documents	2.38	1.330	2.50	1.325	.381
8	Syntax errors such as search for Chamorro (whether it is name of car or animal or something else).	2.68	1.286	2.50	1.319	.203-
9	Un understandable page navigations (i.e. Up and down, left and right page)	2.52	1.255	2.43	1.320	.499-
10	Barriers and redundancies that users face while searching information remotely on library web OPAC	2.7521	.81485	2.6795	.89472	.417-

Scale : 5 = Always, 4 = Often, 3 = Sometimes, 2 = Seldom, 1 = Never

Conclusion and Implication

The study finds various barriers/ redundancies that users' face while searching information on web OPACs. The majority of users responded that they sometimes they face problem in locating search boxes on web OPAC, connectivity problem, browsers and device compatibility issues, overload of information and information filtering problem, lack of exploring skills and knowledge cause difficulties. Moreover, the T-test results at factor level shows that there was significant (Sig=.417) difference in web OPACs of both public and private sector university libraries in Lahore. Therefore, this study suggest the possible implications in the way so that library administrators and web OPACs designers should keep interface simple, clear and visible enough to be located search boxes easily, the web OPACs' interfaces should be designed into to modern computing languages that can work on low band widthand compatible with mobile applications such as HTML and others that are common in use, there should be instructions for users to overcome the information overload and for information filtering, users of web OPACs' should be taught about how to interact with OPACs.

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