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Usability of OPAC in University Libraries

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Usability of OPAC in University Libraries: A Review

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Abstract

The present study describes the review of literature on the usability of card catalogue, OPAC and web OPAC such as visit of the Library, awareness and use of OPAC, learning, frequency of use of OPAC, purpose of use, use of various searching options while using OPAC, satisfaction level on the use of OPAC, problems faced while using OPAC, suggestions for the improvement of OPAC System and its various features. Some national and international levels of such studies have been reviewed in this article.

Keywords: OPAC, card catalogue, Web OPAC, awareness, satisfaction and frequency

Introduction

A library has organized many documents like books, thesis, manuscripts, periodicals, pamphlets, maps, motion pictures, tapes and other printed and non-printed materials. It can be well imagined that what will happen if these documents are not prepared systematically. Even if, they are organized on shelves properly, no person whether user or staff will be able to know and remember what documents are available in the library, if the person does not know the subject of the required documents, thus, there is need an information retrieval system, which is able to reveal what the library has and whether a particular document is available in the library. This information retrieval system should fulfill all the search approaches about the documents like author, title, publisher, call number, *etc.* Such a retrieval system in the context of a library is called library catalogue.

Library catalogue is a list of all the bibliographical details of all the documents in a library or group of libraries at several locations. The card catalogue was a well-known sight to library users for the generations but it has been effectively replaced by the online catalogue, which has greatly enhanced the usability of catalogues. The users can access OPAC with the help of a computer system. Most of the OPAC provides a search facility for any word of the title, author, keywords, subject, *etc.* First time, the Online Public Access Catalogues (OPACs) were introduced in the United Kingdom in early eighties, which later have also been introduced in many Indian libraries. OPAC can be categorized into three generations based on the evolutionary changes to incorporate novel features in data content, access point and user interface. Web-OPAC is a catalogue on the web or internet and users can search their required documents through it. Web-OPAC is the next generation of OPAC. End users are capable of searching the required materials by connecting with Web-OPAC (URL). OPAC is connected with only computer terminals, while Web-OPAC is connected with Internet.

Review of literature is essential before the start of writing about research at any level, as it is basic homework, which is assumed to do vigilantly and a given fact in all theses and research papers. It helps the researcher to find a general idea of his research. The information about the subject, facts, values and theories in research area can be determined by review of literature. These days, research, which is an essential and creativity action, has become an endless exercise of a man as it increases the knowledge of a man. Therefore, research means a careful examination or analysis. Information has been published in every field constantly but a researcher should have advance information on a particular topic that one intends to investigate.

Literature on computerized cataloguing data has resulted in library catalogue facility for the users. Library catalogue makes bibliographic information search speedier and user friendly besides providing additional access points. Numerous studies are conducted in different parts of the world on various aspects of how to academic library users are using card catalogue, OPAC and Web-OPAC, what are the features of an online catalogue, users attitude about online catalogue, users perception towards OPAC and web-OPAC, what are the studies conducted on use of OPAC and web-OPAC, how the users are using it and how the users are using bilingual OPAC and Web-OPAC system. Different types of reference/information sources/consortium have been examined by the researcher on this aspect to achieve the specific objectives of the study. Printed Periodicals, LISA (Library and Information Science Abstract), CeRA- a gateway of e-journals, Science Direct, DOAJ, Emerald full text articles and full text articles from the web was inspected to look into the various aspects of card catalogue, OPAC and Web-OPAC studies. Some national and international levels of such studies have been reviewed in this article.

OPAC Awareness and use

Most of the users in Devi Ahilya university library, Indore felt that OPAC is very useful tool for searching the required documents (Rajput *et al.*, 2008). Among Brunel, City and Kings College of London University, the users of City College preferred to use OPAC as they considered it a simpler tool (Kani-Zabihi *et al.*, 2008). In libraries of Engineering Colleges, Karnataka (India), 81.61% of the students and researchers were using OPAC (Mulla and Chandrashekara, 2009). Majority of the students of Dhaka University, Bangladesh and Niger Delta University, Nigeria were not aware of library OPAC and its use (Ebiwolate, 2010; Islam, 2010). Majority of the foreign students from developing countries at the University of Delhi did not use Web-OPAC prior to coming to the University of Delhi due to the lack of awareness about OPAC associated facilities (Madhusudhan, 2012). Ruzegea (2012) found almost all the respondents at International Islamic University Malaysia aware of OPAC. Kumar (2013) observed the level of awareness about OPAC more in Panjab University. Fabunmi and Asubiojo (2013) found 68.7% of the respondents at Obafemi Awolowo University, Nigeria aware of OPAC services, while the remaining percentage of the respondents used manual catalogues to access library resources due to the lack of awareness, lack of skill and problems encountered during usage. Similarly, Onuoha *et al.* (2013) found that OPAC utilization among the users was poor, and most of the respondents from Redeemer's University and University of Agriculture Abeokuta, Nigeria (75.38 and 49.55%, respectively) indicated that they did not use OPAC at all. In a study of School of Engineering in Tezpur University, Gohain and Saikia (2013) observed that 76.67% respondents were aware that OPAC helps borrowers to locate document. Kumar *et al.* (2014) reveal that almost all the postgraduate students, research scholars and faculty members at CCS H.A.U., Hisar were fully aware of OPAC. Kumar (2014) found the faculty members in Great Lakes Institute of Management at Chennai agreed that the OPAC is faster than the manual catalogue. In Babcock University, Nigeria, majority of the respondents (71.4%) were not aware that OPAC can be used to retrieve materials and 65.8% of the respondents were not aware that they can access/browse web OPAC with their mobile phones before coming to the library to borrow materials (Bamidele *et al.*, 2014). More than half of the users (53.41%) at Punjabi university Patiala were aware about OPAC (Kaur and Kathuria, 2015).

There was a significant relationship between the awareness of OPAC and the use of OPAC, and awareness among the undergraduates in University of Lagos and Obafemi Awolowo University was high but their level of OPAC use was low (Fati and Adetimirin, 2015). Majority of the users were unaware of facilities provided by the library of Sri Lankan University (Li and Wanigasooria, 2015). Almost all the faculty members of Kurukshetra University were aware of library OPAC searching facility followed by research scholars and students (Kumar, 2016). Awareness and use of OPAC seem to be a challenge among Nigerian library user as demonstrated that 23.8% of the respondents were using OPAC independently and only 3.2% accessed library resources from their hostels and 0.2% from their homes (Fabunmi and Asubiojo, 2013). A study on using of card catalogue at Ladoke Akintola University of Technology Library, Ogbomoso, Nigeria reveals that card catalogue was underutilized by the undergraduate students (44%) but more heavily by postgraduate students (78%), academic staff (74%) and administrative (66%) staff (Ajala and Aderinto, 2013). Bamidele *et al.* (2014) investigated the awareness and use of OPAC by Faculty Members of Babcock University, Nigeria and noted that only 26% of the respondents used OPAC independently to retrieve library information resources and majority of the respondents retrieved library information resources by perusing through the shelves and seeking assistance from the library staff. Rout and Panigrahi (2018) examined the OPAC in library users of Odisha and revealed that most of the users were unaware of all the search facilities, which are available in OPAC system.

OPAC Learning

Only 36.5% of the users at Guru Nanak Dev University, Amritsar learnt the use of OPAC with the help of their friends/colleagues and 23% from their previous experience, while 17.1% from library staff and also reveal that majority of the users (73.7%) used OPAC and card catalogue as well (Narang and Singh, 2013), and 26.8% of the users at law university library, Andhra Pradesh learnt the use of OPAC from their friends or someone at a nearby computer centre, 13.6% through printed instructions pasted near OPAC terminals and some of them learnt by using the instructions of computer screen (Devendra and Nikam, 2013). At SVC College Library, Bantwala, Manglore, only 34.48% of the users search information concerning the library resources through OPAC with their self-efforts, friends, or colleagues, followed by 30.18% with the help of library orientation program provided by the library (Veena *et al.*, 2015).

Frequency of OPAC Use

The frequency of OPAC use by the VHSN College users reveals that more than half of the users (58.75%) were using OPAC daily, followed (19.58%) by twice in a week (Velmurugan and Amudha, 2011). In Lagos State University, Nigeria, 52.87% of the users were using OPAC very often, 34.49% often, 6.32% occasionally, 4.02% rarely and only 2.30% never used OPAC (Adigun *et al.*, 2011). At International Islamic University Malaysia, 56.7% of the respondents rarely used graphics interface (Ruzegia, 2012). Only one third of the respondents at Annamalai University Library, Tamilnadu used OPAC frequently (Thanuskodi, 2012). The users at Mumbai and Navi Mumbai generally explored OPAC more than four times in a month (Sawant *et al.*, 2012). Majority of the students in the Nigerian University Libraries were using catalogue occasionally (Owolabi and Salaam, 2013). Narang and Singh (2013) examined a study on OPAC at Guru Nanak Dev University, Amritsar and reported that 40% users used it occasionally and 23.7% once in a week, while only 9% used it daily, and 81.9% of the users spent their time for searching OPAC less than one hour. Sujatha (2014) studied to know the usage of OPAC by the research scholars in Kakatiya University Library, Warangal, Telangana and observed that 41.93% of the users were using OPAC whenever needed and 25% once in a week. Study on OPAC in Great Lakes Institute of Management at Chennai reveals that 38.82% of the users visited the resource centre daily (Kumar, 2014). Study on OPAC in Law University Libraries of South India reveals that 28.3% of the respondents used OPAC quite a lot (Devendra and Nikam, 2014). Study on OPAC at Punjabi university, Patiala indicates that 25.53% of the respondents used OPAC twice a week followed by 21.28% of the respondents who used it frequently (Kaur and Kathuria, 2015). Veena *et al.* (2015) investigated the use and awareness of online public access catalogue OPAC facility by users of SVC College Library, Bantwala, Manglore and found that 56.89% of the users were using OPAC facility on daily basis, while only 2.58% used it monthly. Kumar and Singh (2017) studied the use of OPAC in the university library of GGIPU, Delhi and revealed that 39.1% of the users search their required reading materials by using OPAC facility daily for finding the bibliographical details of the documents.

Purpose of use of OPAC

In five libraries of Delhi, a high percentage of respondents were utilizing OPAC as a search tool for retrieving documents (Ansari and Amita, 2008). At the University of Kashmir, 60% of the respondents used OPAC to search the library collection (Qadri, 2012). Sawant *et al.* (2012) also found almost all the students of various universities of Mumbai and Navi Mumbai using OPAC for study material only. A study by Adedibu (2008) on the use of catalogue by the science students at University of Ilorin indicates and majority of respondents (90.1%) used library catalogue to gain access the library stock and three-quarter (74%) claimed to know, how to use both the card catalogues and the OPAC. Study on library use pattern in Engineering Colleges in Karnataka demonstrates that 53.2% of the users were using OPAC to locate their reading materials (Kannapanavar and Manjunatha, 2010). Moreover, Yusuf and Iwu (2010) examined the use of OPAC in Covenant University, Nigeria and found that 61.9% of students used OPAC to access library materials. Study on the use of OPAC in VHSN College reveals that less than a half of the users used OPAC for finding the different types of document and some of them to know the availability of books in the library and the bibliographical details (Velmurugan and Amudha, 2011). Study on the use OPAC at Annamalai University Library reveals that majority of the users used OPAC to know the availability and location of the requisite documents (Thanuskodi, 2012). In a study on the effective use of OPAC at Lagos State Polytechnic Library, Ikorodu, Yusuf (2012) observed that 91.14% of the respondents used OPAC to retrieve materials in the library, while 8.86% of the respondents did not use OPAC to access library collections. Study on the exploration of OPAC facilities by the students as well as faculty members of Unnamalai Institute of Technology in Kovipatti, Tamil Nadu reveals that usage of OPAC has increased their information retrieval rate especially in locating books and other reading materials in the library (Lakshmi *et al.*, 2013). Study on OPAC exploration in School of Engineering, Tezpur University reveals that 51.03% respondents used OPAC everyday to locate document on shelves (Gohain and Saikia, 2013). Study on OPAC at Guru Nanak Dev University, Amritsar reveals that 46.1% of the users used OPAC to know the location of required documents, 36.7% to check the availability of books in the library and 10.9% to determine the number of copies available in the library (Narang and Singh, 2013). While investigating the use of OPAC in Great Lakes Institute of Management at Chennai, Kumar (2014) found that 43.52% of the users consulted OPAC only to know the location of the documents, followed by 24.70% availability of the documents, and indicated that most of the users locate their required documents through OPAC, while some of them directly go to the shelves and browse books without using of it. Study on the use of OPAC at CCS H.A.U., Hisar reveals that 52.5% of the users used OPAC to know the availability of documents in the

library, while only 15.3% used OPAC to know the number of copies available in the library (Kumar *et al.*, 2014). Study conducted by Sujatha (2014) shows that majority of the users (74.19%) explored the OPAC facilities for choosing reading materials, to check whether the required books are available or not and to locate books in the library. Study on OPAC in Law University Libraries of South India reveals that majority of the respondents strongly agreed that they searched their required text and reference books in their library through OPAC (Devendra and Nikam, 2014). Majority of the OPAC users at Punjabi University, Patiala were using OPAC only to check the availability of documents in the library (Kaur and Kathuria, 2015). A study conducted by Veena *et al.* (2015) on online public access catalogue OPAC facility at SVC College, Bantwala, Manglore reveals that 36.22% of the users were using OPAC to locate the documents on shelves, followed by 25.86% to check the availability of the documents. Study on OPAC use at Central Library of Kurukshetra University reveals that the maximum users was using OPAC for finding the latest books on their subjects or for confirming the status of existed books available in the library (Kumar, 2016).

OPAC Searching Facilities

Study on the use of OPAC in Annamalai University reveals that majority of the users search their required information on OPAC using author search option (Ravichandran and Balasubramani, 2008). Another study on user perceptions of OPAC at Brunel University, Uxbridge, Middlesex reveals that regardless of user's IT backgrounds of the functionality, expectations of OPAC remained the same, which is to facilitate easier access to the collection, however, based on user's experience with OPAC, their requirements with respect to specific features may change (Elahe *et al.*, 2008). Study on OPAC use at the University of Ilorin shows that 46.3% respondents preferred Subject Catalogue, 26.7% preferred the Author/Title and 21.2% preferred a combination of Author/Title and Subject Catalogues (Adedibu, 2008). In 2008, Mehtab and Amita observed that many users in Indian libraries were unaware of complex searching and faced numerous problems of recall and precision, thus, were not able to find relevant documents using OPACs. In five Delhi libraries, a high percentage of users utilized OPAC as a search tool for retrieving documents (Ansari and Amita, 2008). Study on changing pattern of user expectations regarding the library catalogue at Mangalore University reveals that most of the users were using library catalogue and giving first preference to author approach, second preference to subject approach and third preference to title approach under the guidance of library staff (Kumbar and Mallaiah, 2008). Study on the use of OPAC at VHSN College shows that 55% of the users searched their desired documents by using author approach, 24% title search and remaining 18% chose the other searching options available on OPAC (Velmurugan and Amudha, 2011). Kumar and Vohra (2011) studied the use of OPAC at University of Punjab Library and found that a significant number of users searched information regarding the library material through OPAC despite encountering problems. Kumar (2011) studied the use of OPAC in Chandigarh and Punjab University libraries and noted that majority of the users searched their required reading materials through OPAC by using simple search option. Babu and Naidu (2011) studied the use of OPAC in Tamil Nadu universities and noticed that less than half of the users (42.7%) searched their required information through OPAC by using author option, 32% by title and 26% by subject. The study of Central Libraries of IIT Delhi, Kanpur and Kashmir University reveals that a large number of users were using simple search and lesser number of users used advance search, however, in IITs, the advance search facilities were more popular in comparison of Kashmir University (Ahmad, *et al.*, 2012). Study on the use of Web-OPAC by the foreign students at the University of Delhi reveals that most popular search type or first choice of all the users was the title search and the known item searching was more popular than the unknown item searching (Madhusudhan, 2012). Study on the use of OPAC at Mumbai and Navi Mumbai reveals that most of the users prefer author search option for searching the required reading materials (Sawant, *et al.*, 2012). Study on the use of OPAC as a document retrieval tool at University of Kashmir reveals that most of the students search their library materials through subject, author and title approach (Qadri, 2012). Study conducted by Kumar (2012) on comparison of OPAC use between two university libraries of Kurukshetra and Panjab University reveals that users of both the universities mainly searched their documents through title, author, keyword and subject. Study on the use of OPAC by the engineering students of Tezpur University reveals that 72.05% of the users were aware about the easy search facilities in different categories of document such as book, thesis, report, back volume, *etc.* by changing the types of document category (Gohain and Saikia, 2013). Study on OPAC at Guru Nanak Dev University, Amritsar reveals that 43.2% of the users searched their books through author approach and 37.4% by title approach, while nobody searched reading materials through OPAC using call number (Narang and Singh, 2013). Study in libraries of Nigerian universities

shows that majority of the users preferred to search information through browsing the shelves (Owolabi and Salaam, 2013). Study on the use of OPAC in libraries of Kenneth Dike and University of Lagos shows that OPAC allowed timely accessibility to search materials from outside the library (Adenike and Akin, 2014). Study on OPAC in Great Lakes Institute of Management, Chennai shows that 41.17% of the users accessed their required documents through title approach and 22.35% by author approach (Kumar, 2014). Study on OPAC at Kakatiya University Library Warangal, Telangana shows that 66.93% of the users searched their desired documents with author approach and 61.29% with subject approach (Sujatha, 2014). Investigation on OPAC at Punjabi university, Patiala shows that 40.35% users searched OPAC through title approach and 33.33% by author approach (Kaur and Kathuria, 2015). Study on OPAC at SVC College, Bantawala, Manglore reveals that 37.07% of the users used OPAC by author search and 28.44% by title search (Veena *et al.*, 2015). Study conducted by Kumar *et al.* (2014) on the use of OPAC at CCS H.A.U., Hisar shows that title search was the most favorable search among the users (72.9%) followed by the author search (49.9%). Rout and Panigrahi (2018) specify the OPAC in library users of Odisha and shows that the use pattern of OPAC was quite low and most of the users searched their required reading materials by title, and author approach and majority of the users were moderately successful for locating their required documents.

Users Satisfaction Level Regarding OPAC

Ravichandran and Balasubramani (2008) in Annamalai University library studied the use of online public access catalogue by the research scholars and noticed that almost all the library users were satisfied with their information search through OPAC. OPAC use study in VHSN College reveals that the majority of the users (60.42%) were either satisfied or highly satisfied with OPAC searching and 24.17% neutral, while 15.42% users were not satisfied with the OPAC (Velmurugan and Amudha, 2011). In Punjabi University Library, Patiala, Punjab, a study conducted by Kumar (2011) to find out the impact of internet search engine usage with special reference on OPAC search reveals that majority of the users were influenced by search engines because they also used OPAC like search engine. Similarly, Babu and Naidu (2011) studied OPAC in Tamil Nadu and found that majority of the respondents (63.7%) were either satisfied or highly satisfied in searching OPAC, 22% of respondents were neutral and the remaining 14.7% were not satisfied with OPAC searching. In a study at Central Libraries of IIT Delhi, Kanpur and Kashmir University, Ahmad *et al.* (2012) found the advance search facilities in OPAC (providing filtered, high recall and high precision provisions) enhancing user's satisfaction. In Tezpur University School of Engineering, study on the use of OPAC and users satisfaction reveals that the students were very much satisfied with the performance and quality of OPAC services (Gohain and Saikia, 2013). Study on OPAC at Guru Nanak Dev University, Amritsar explains that majority of the users were satisfied with the assistance services rendered by the staff (Narang and Singh, 2013). In Redeemer's University and University of Agriculture Abeokuta, Nigeria, Onuoha *et al.* (2013) studied the use of OPAC among the final year students and found the users moderately satisfied with the use of OPAC. In a study on the use of OPAC in Great Lakes Institute of Management at Chennai, Kumar (2014) noticed that majority of the users were highly satisfied with the present OPAC facility. Study on OPAC use at CCS H.A.U., Hisar reveals that 35.3% of the users were very satisfied from the present OPAC services provided by the Nehru Library, while 8% users were unsatisfied and the maximum number of users (38.7%) said that library staff was always available near the OPAC terminals to help the users (Kumar *et al.*, 2014). Study on OPAC conducted at SVC College, Bantawala, Manglore reveals that most of the users felt OPAC a very convenient and timesaving information retrieval tool in the library (Veena *et al.*, 2015). Kumar and Mahajan (2015) studied the usage of OPAC in Chandigarh public libraries, in which, they found most of the users satisfied with the OPAC and its services but found unaware about OPAC services. In an OPAC study at Punjabi University, Patiala, Kaur and Kathuria (2015) found almost all the users satisfied with the present display search results of OPAC. In Sri Lankan university libraries, Li and Wanigasooria (2015) observed most of the users and staff members dissatisfied during primary stages of OPAC. Shivakumaraswamy and Narendra (2016) investigated OPAC use at BGS Institute of Technology, Karnataka and noted 26.93% of the users from the Electronics and Communication Engineering and Computer Science departments highly satisfied with the performance and quality of OPAC services followed by Mechanical Engineering (12.31%) and Civil and Basic Science students (11.54%) the partially satisfied. Kumar and Singh (2017) studied the use of OPAC in the university library of GGIPU, Delhi and revealed that 54.4% of the users were fully satisfied with the present OPAC facility.

Problems Encounter in the Use of OPAC

Study on the use of OPAC in five Delhi libraries shows that sometimes, the users faced problems of recall and precision, and in some searching, the users were not able to find relevant Study on the effective use of OPAC in libraries of Engineering Colleges of Karnataka demonstrates that 18.39% of the respondents were not using this facility due to some major constraints such as lack of awareness and information technology competency and user unfriendly software (Mulla and Chandrashekara, 2009). In a further study on OPAC use at Lagos State Polytechnic Library in Nigeria, Yusuf (2010) identified lack of awareness amongst the library users' community, lack of instruction in the use of software package, shortage of terminals and instability of electricity supply among others as hindrance for use of OPAC. Similarly, in library of Nigerian Lagos State University, Adigun *et al.* (2011) noticed that the users faced some problems with computerized catalogues like shortage of terminals, improper working OPAC modules and lack of proper orientation, and most of the Nigerian libraries used unstable software managed by unskilled staff. Kumar and Vohra (2011) studied the use of OPAC at University of Punjab and noted that 97.2% of the respondents expressed lack of knowledge, 72.2% expressed complication in use, 38.8% expressed no output/null retrieval, 63.8% expressed lack of on-screen help, 38.8% expressed lack of assistance from the library staff and 30.5% expressed slow speed. Study on the use of OPAC at University of Kashmir shows that the students were not using OPAC due to the lack of awareness (Qadri, 2012). Study on OPAC at University of Delhi shows that OPAC was too old and unattractive and language was the most obvious intricacy faced by foreign students while searching Web-OPAC (Madhusudhan, 2012). Study on usability of OPAC interface features at International Islamic University Malaysia reveals that 50% of the respondents faced visibility interface features, while 16.7 and 23% of them faced the problem of accessibility and usability, respectively (Ruzegia, 2012). Study on the use of OPAC between two university libraries of Kurukshetra and Panjab University reveals that the maximum number of users accessed their required material through OPAC despite encountering problems such as slow query processing speed, less awareness of advanced features, unavailability of staff assistance, insufficient number of terminals and lack of power backup (Kumar, 2012). Study on the use of OPAC at Mumbai and Navi Mumbai reveals that majority of the users faced spellings related problems while searching OPAC (Sawant *et al.*, 2012). Study on the use of OPAC at Redeemer's University and University of Agriculture Abeokuta, Nigeria reveals that the users faced some problems such as lack of orientation, inadequate computer and erratic power supply (Onuoha *et al.*, 2013). While studying about the use of OPAC at Unnamalai Institute of Technology in Kovipatti, Tamil Nadu, Lakshmi *et al.* (2013) found some problems like lack of basic searching skills among the users as a major reason for not utilizing full features of OPAC. Study on the use of OPAC in Tezpur University shows that lack of skills to use OPAC independently, lack of awareness about OPAC and lack of proper guidance to use OPAC were the major problems faced by the users (Gohain and Saikia, 2013). Similarly, study on awareness and use of OPAC by students of Obafemi Awolowo University, Nigeria reveals that majority of the respondents were not using OPAC due to lack of searching skills, lack of awareness, irregular power supply, network failure and inadequacy of computer terminals designated for the use of OPAC, and most of the users were using manual catalogue due to lack of awareness (Fabunmi and Asubiojo, 2013). Adenike and Akin (2014) studied about the use of OPAC in Kenneth Dike and University of Lagos Library and noted that power failure was one of the numerous problems in using OPAC facilities. Study on the use of OPAC at CCS H.A.U., Hisar reveals that the maximum number of users (79.6%) was unaware about the screen help or user assistance facility of OPAC system (Kumar *et al.*, 2014). Investigation about the awareness and use of OPAC by faculty members of Babcock University, Nigeria shows that lack of orientation from library staff/librarians was the major factor that militated against awareness and use of Babcock University library OPAC (Bamidele *et al.*, 2014). Study on OPAC at SVC College, Bantawala, Mangalore reveals that few of the library users were facing some problems such as lack of skills, lack of awareness, lack of computer skills, *etc.* while using OPAC (Veena *et al.*, 2015). In public libraries of Chandigarh, Kumar and Mahajan (2015) observed that there was a lack of computer skills, awareness among the users and proper orientation from the library staff in usage of OPAC. Study on the use of OPAC at Punjabi University, Patiala shows that 57.5% of the users were found to face difficulty in handling OPAC and 30% of the users to have lack of knowledge about the use of OPAC (Kaur and Kathuria, 2015). Study on the use of OPAC at BGS Institute of Technology reveals that lack of skills to use OPAC independently and lack of support from library staff were the main problems for not using it (Shivakumaraswamy and Narendra, 2016). Swaminathan, K.S.M. (2017) studied the OPAC at Anna University regional campus, Coimbatore and found a significant number of the users searched their required reading materials by despite encountered problems. A study conducted by Kumar and Singh (2017) at GGIPU, Delhi on use of OPAC and found that 24.73% of the users faced some problems due to

less awareness of OPAC features while using. Rout R. and Panigrahi, P. (2018) indicate the OPAC in library users of Odisha and explained that most of the users faced problems while using OPAC like difficulty in query formulation, search failure, spelling mistakes, inadequate instructions in OPAC, lack of proper guidance from the library staff, etc.

Suggestions

The study of Indian libraries reveals that necessary training should be provided for using software in efficient way (Mehtab and Amita, 2008). Study on the use of OPAC in Annamalai University suggests that OPAC should be kept up to date by adding new entries speedily, which would be helping in the effective use of OPAC (Ravichandran and Balasubramani, 2008). Mulla and Chandrashekara (2009) studied the effective use of OPAC in the libraries of Engineering Colleges of Karnataka, in which, they emphasized the need of education programme module for users to promote the effective usage of OPAC. The study on OPAC use in Central Libraries of IIT Delhi, Kanpur and Kashmir University suggests that the short-term training should be given to OPAC users for the effective utilization of advance search facilities in all the libraries (Ahmad *et al.*, 2012). Study on the use of OPAC at Mumbai and Navi Mumbai suggests that spell check and book review should be added in the existing OPAC as an additional feature (Sawant *et al.*, 2012). Kumar in 2013 investigated the use of OPAC in Kurukshetra and Panjab University libraries and suggested that both the libraries should provide an orientation program to the users and assistance facility near the OPAC system. Study on the use of OPAC at the University of Delhi shows that most of the students had not received any training from the library (Madhusudhan, 2012). Xiaojuan and Na (2012) studied the gap between users and cataloging from users' perspective at Nanjing University Library, China and observed that users' feedback cannot reach to cataloging process, which is really needed for cataloging control, and the users should participate in all of library operations, and the feedback could be helpful for library to improve not only cataloging but also in acquisition, collection, circulation and other operations. Study on the use of OPAC at Unnamalai Institute of Technology in Kovipatti, Tamil Nadu suggests that library should organize quality instruction programmes to improve knowledge and skills of the users (Lakshmi *et al.*, 2013). Onuoha *et al.* (2013) studied the use of OPAC in Redeemer's University and University of Agriculture Abeokuta, Nigeria and recommended that the students should adequately be trained to make maximum use of OPAC and more computer and power supply should be provided in Nigerian universities. The study on catalogue use in Nigerian University Libraries suggests that library use instruction should be included in the university curriculum and the librarians should provide practical demonstrations on the use of various catalogues to students during orientation programs (Owolabi and Salaam, 2013). Study on catalogue use in Ladoko Akintola University of Technology Library, Ogbomosho, Nigeria suggested the introduction of an OPAC rather than the traditional library (Ajala and Aderinto, 2013). Study on the use of OPAC at Obafemi Awolowo University, Nigeria suggests that the library should create more awareness and effective education for the students at various levels to ensure maximum utilization of library resources (Fabunmi and Asubiojo, 2013). Study on catalogue use in Niger Delta University, Island suggests that high quality orientation programme, guidelines and demonstrations on the use of catalogue as solution to the problems encountered by the students in using the catalogue should be provided (Ebiwolate, 2010). Study on the use of catalogue at Dhaka university library, Bangladesh suggests that proper user education program for using OPAC and catalogue for the retrieval of books and other information resources should be organized and made mandatory for all users, and guidelines on the use of catalogue should be prepared and displayed where users can easily read them (Islam, 2010). Study on the use of OPAC in Medical Libraries, Chandigarh strongly advocates that the librarians should assist users in learning the use of OPAC, search engine, e-mail and CD-ROM techniques and inform the library users about the websites available through various networks (Kaur and Sharda, 2010). Study on the use of OPAC in library of Panjab University suggests that library should organize quality instruction programmes to improve knowledge and skills of the users (Kumar and Vohra, 2011). Study on the use of OPAC in Nigerian Libraries at Lagos State suggests that there is a need for proper orientation and provision of more OPAC terminals to acquire necessary software (Adigun *et al.*, 2011). In Babcock University, Nigeria, Bamidele *et al.* (2014) examined the awareness and use of OPAC by the faculty members and recommended that the librarians should organize orientation and sensitization programmes in order to create awareness and encourage the university community especially the faculty members at various schools for the use of OPAC effectively. Li and Wanigasooria (2015) studied the usage, satisfaction and native problems of OPACs in Sri Lankan University libraries and suggested that regular appropriate training for users, and technological advancement and native language searching facilities should be

provided for the identified problems. Kaur and Kathuria (2015) studied the use of OPAC in Punjabi University Library, Patiala and recommended that library should conduct orientation programme at the start of every academic session since it is very important and useful for students. Swaminathan, K.S.M. (2017) studied the use of OPAC in Anna University regional campus, Coimbatore and suggested that library should be conducted quality instruction programmes to improve the knowledge and skills of the users.

Miscellaneous

Dilger (2008) discussed the usability of OPAC systems in large libraries with a colour-coded classification system showing the book status like the green highlight for available books, yellow highlight for borrowed and red highlight for reference copies. Qadri (2012) studied a document retrieval tool at the University of Kashmir and examined those who were using OPAC cited many features like time saving, fast response, remote access, *etc.* Kumar (2011) evaluated the effect of web searching on OPAC users in Chandigarh and Punjab University Libraries and noted that web searching influenced their OPAC searching process greatly, as majority of searches were performed on OPAC-like popular search engines. Simultaneously, the users did not know the difference between internal-workings of OPAC and common search engines such as Google. Study on the influence of demographic factors on the use of online public access catalogue (OPAC) in two universities of Southern Nigeria reveals that gender, age and level of study had no influence on the use of OPAC (Emiri, 2015). The study on users' satisfaction status concerning OPAC services in BGS Institute of Technology shows that 36.92% of the users visited library regularly followed by 27.69% once in two days, out of which, 27.69% visited the library only to locate the books followed by 20.77% for bibliographical details of the documents. The study also reveals that 26.93% of the users from the Department of Electronics and Communication Engineering and Computer Science were highly satisfied with the performance and quality of OPAC services followed by Mechanical Engineering (12.31%), however, the Civil and Basic Science students (11.54%) were partially satisfied. Lack of skills to use OPAC independently and lack of support from library staff were the main problems while using it (Shivakumaraswamy and Narendra, 2016).

Conclusion

The review of literature reveals that in last decade, the working of academic libraries users has changed significantly and most of the libraries are now intended to follow Web based OPAC in place of traditional catalogue. The review of literature includes the methodologies of studies on OPAC by using survey method, OPACs and Web OPACs technology based on various features, applications, advantages, characteristics of OPAC and Web OPAC. The system meets the expectations of OPAC and Web OPAC users.

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