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Aims and Scope

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Changing Greek libraries: A continuous dialogue

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Abstract

In the era of radical socio-economic-technological developments, the Library and Information Science sector in Greece is undergoing a series of changes in a dialectic relation with technological changes. Libraries in Greece have a long history, from the Academy of Plato and the Lyceum of Aristotle in the 5th century BC to the transition of the National Library of Greece at the Stavros Niarchos Foundation Cultural Centre. This paper aims to provide an overview and record the milestones signifying the beginning of the changes happening in every aspect of the Greek LIS landscape. In addition, it aims to highlight the changes in the Greek library scene, extending from synergies and networks to new library buildings, as well as the role of LIS education and lifelong learning.

Keywords

Change in libraries, Greek libraries, history of libraries, library buildings, library education, library partnerships

Introduction

Ποταμοῖσι τοῖσιν αὐτοῖσιν ἐμβαίνουσιν ἕτερα καὶ ἕτερα ὕδατα ἐπιρρεῖ.

Ἡράκλειτος

‘Ever-newer waters flow on those who step into the same rivers’, said Heraclitus of Ephesus, a pre-Socratic philosopher in 6th century BC, underlining the perpetual motion of the natural and human world. As rivers constantly renew their waters, creating a changing environment, so Greek libraries have been changing through the centuries. This article will provide a brief history of Greek libraries’ landscape on how they adapt to changes in today’s society and offer their patrons a wide variety of services.

In the first decades of the 21st century, Greece has encountered a rapidly changing environment from many angles, which also affects all types of libraries. The recent building of the National Library of Greece signifies the new environment in which Greek

libraries work towards fulfilling a multi-aspect role in society. A key element of the new environment is co-operation which has materialized in several and different forms. Some synergies are implemented under an institutional body while others on a volunteering basis with the same aim: to share sources, ideas and best practices.

The changing landscape includes not only new services but also new landmarks which will attract the community’s members to join. In the last decades, new library buildings have been built across the country, marking a significant investment towards a learning-based society. These libraries function as

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bridges between the printed past and the digital future. Those two banks of the river, printed and digital, are in a dialectical relationship with libraries playing the role of the mediator.

However, besides services and spaces, librarians are changing, too. Librarians need to re-define their position in an ongoing process which dramatically transforms their daily work. The Library Association and the Library and Information Science (LIS) Schools adapt to those needs, offering librarians perspectives and inculcating them with alternative ones.

The work which has already been done can be imprinted in the actual work of our libraries in cutting edge issues such as information literacy and lifelong learning. In a period when the use of information is crucial both for the individual and the society, libraries promote autonomous, independent, critical and free thinking among the community's members.

A brief history of Greek libraries from antiquity to the creation of the Greek state

Libraries within Greek civilization and the Hellenic world have a long and rich history. Evidence shows that the formation of private and public philological libraries began in Greece around the 6th century BC. The birth of philosophy in the Greek cities of Ionia (Asia Minor) and the consequential need for those philosophical works to be reproduced in books led to an increasing production, circulation and collection of books, containing the thought of Thales, Anaximander and other physical philosophers. The circulation of books, especially through the Eleatic school, led Polykrates, the tyrant of Samos, to build the first public library in history (Staikos, 1997: 23).

The contribution of the Sophists to the spread of books in classical Athens (5th century BC) is unique. Sophists used books to support their educational methods. The formation of the ancient theatre, the lyric and epic poetry, and the works of philosophers demanded many written documents. The emergence of great classical philosophers such as Plato and Aristotle and their schools led to the birth of large private libraries in Academy and Lyceum (4th century BC). Importantly Aristotle instilled within his pupil, Alexander the Great, the idea of constructing an ecumenical library. Alexander the Great did not have time to complete his vision. Instead, it was Ptolemy Soter, the king of Hellenistic Egypt, who founded the Museum and the Alexandrian Library (283BC). The history, the role and the importance of the Alexandrian Library laid the foundations for western civilization.

During the Roman period, libraries in the Hellenic world followed the trends of the Roman Empire. At the end of the 1st century AD, Titus Flavius Pantaeus and his son Flavius Menandrus donated a library to the city of Athens, situated in the city centre. Archeological excavations in the area unveiled the Library's regulations which state: 'No book is to leave the building for we have sworn an oath. The library shall be open from the first hour to the sixth' (Staikos, 1997: 36).

The inauguration of Constantinople as the new capital of the Roman Empire in 330AD and the prevalence of Christianity as the official religion of the new state opened a new era for the libraries of the Hellenic world in the Byzantine Empire. The combination of Christianity with the needs of the State for its own bureaucracy and educational system led to the realignment of book production and libraries. After the death of Emperor Justinian (565AD), the Islamic invasion at the eastern parts of the Empire, and the capture of Alexandria by the Arabs, books and libraries in the Hellenic region experienced a decline. The main institutions holding and developing libraries during that period were mainly the monasteries. During the period of Byzantine humanism in the 9th century, a great renaissance of books' circulation and libraries appeared. Patriarch Photios composed a work named 'The Library' which is the first extensive annotated catalogue of a highly valuable corpus of works in the history of humanism. During the 10th century, a Palace Library was established. The final Byzantine Renaissance (13th to 15th century) was a period when classical works were studied again and thus, reclaimed their value. In this period, both public and private libraries multiplied in numbers. The fall of Constantinople to the Ottomans led many of those collections to be shipped to Italy, thus contributing to the Renaissance and feeding the main collections of many Italian libraries.

Following the years after the fall of Constantinople and the rule of the Ottomans in the Hellenic world, intellectual production and education retreated. Some of the main libraries survived, especially those belonging to ecclesiastic institutions such as monasteries and the Patriarchs of the East. The birth of typography and the Enlightenment brought rebirth to Greek books and libraries. At the end of the 18th century, and as the decline of the Ottoman Empire left more space to cultural activities, many schools with libraries were established in the Hellenic world.

After the war of Independence (1821–1829), one of the first acts of Ioannis Kapodistrias, the first Governor of the Independent State, was the establishment of the first general library of Greece (1829) in the

island of Aegina. In 1834 Otto, the first King of Greece moved the library to Athens. In 1845 the Hellenic Parliament Library was established. During the first years of Independence, a new impetus to education, literature and national consciousness took place, leading to the opening of many new public and academic libraries in the new nation. Along with the expansion of the State's borders in its current status the country's intellectual capital increased (Semertzaki, 2006).

Framework of Greek libraries

It is not surprising to mention that in modern Greece one can find the same types of libraries as in other countries: the National Library, academic, public, school and special libraries. Their organization, services and growth differ by type of library. The main libraries are the National Library of Greece, the Hellenic Parliament Library and the Academy of Athens. The General State Archives of Greece maintain a central service in Athens and several subsidiaries in the capitals of the prefectures in the country. This section describes the status of libraries within each of these sectors.

Academic libraries

Academic libraries are governed by universities and the technological education institutes in Greece. The older institutions, such as the National Kapodistrian University of Athens, possess rich library collections. However, in the 1990s the academic libraries flourished mainly due to the funds provided by the European Union and particularly its Second Community Support Framework (CSF).¹ With these funds the libraries installed integrated automation systems; extended and improved their services; benefited from new buildings; and purchased books, journals and library equipment.

In terms of the improvement of the organization of the academic libraries in the 1990s, a library consortium, the Hellenic Academic Libraries Link (HEAL-link) was established. Among its first goals were the creation of a Union Catalogue of the Hellenic Academic Libraries; the establishment of common policies in print and electronic journal subscriptions; and the licence agreements negotiated with electronic information providers.

Public libraries

In Greece public libraries are divided in *dimosies* (public) and *dimotikes* (municipal). The main difference between them is their supervisory body. Several

public libraries have a long history. Since 1998 public libraries funded by the Second CSF, improved their services and collections, which resulted to the change of the status of and attitude to libraries: to being considered as important social, educational and cultural hubs in the community they serve. They also upgraded their collections.

Public libraries are supervised by the Ministry of Education, Research and Religious Affairs which financially supports 46 public libraries and the National Library of Greece (NLG). They are distributed all over Greece, while most of them expand their services into the wider area they serve by utilizing a fleet of 30 mobile libraries. The Hellenic General Council of Libraries (HGCL)² is a corporate body in the Ministry of Education, Research and Religious Affairs established by law in 2003. The responsibility of HGCL is to develop and suggest policies to the Minister, as well as to further analyse implementation strategies for those 46 public libraries in Greece, in cooperation with the NLG.

The 120 active municipal libraries have the same goals and offer the same services as the public libraries, but they are under the jurisdiction of the local authorities and report to the Ministry of Interior and Administrative Reconstruction. Most of the municipal libraries are not as privileged as the public libraries with some exceptions, such as the library and the branches of the City of Thessaloniki. Several children's libraries function along with public or municipal libraries as their branches (Glossiotis and Kyriakopoulos, 2013).

School libraries

Except for some private schools in Greece that operate decent libraries, school libraries are not well developed. In 1994 a decision was taken to establish 500 libraries in schools of secondary education. The action was made possible by the funds of the EU Second CSF. During the pilot phase in 1999–2000, 50 school libraries staffed by a librarian operated in several prefectures of the country. During the second implementation phase, 450 additional libraries were created, staffed by teachers. Currently, most of the school libraries are unavailable for use and lag beyond other kinds of libraries in Greece (Papazoglou and Semertzaki, 2001).

Special libraries

Special libraries are dispersed around the country. The exact number of them is not precisely known because they report to their parent organizations and they are not governed by a centralized authority. The subject

coverage varies from hospital, bank, financial, technical, law, museum, music to cultural institutions and research foundation libraries. Many of them are several decades old and hold precious collections preserving Greek culture and literature in their discipline. Some are open to the public, and others operate by appointment. The level of their growth depends on the support they get from their parent organizations. Being special libraries, they create their own strategic plans, they are funded by their organizations and make their own plans for collection development, collaborations and activities.

Among special libraries, the National Documentation Centre (NDC) plays a significant role because its mission is to collect, document, manage, disseminate and preserve quality digital content and data produced by the Greek scientific, research and cultural communities.³ Some examples of special libraries include the libraries of the Eugenides Foundation (technology and applied sciences), the Bank of Greece (banking/economics), the Gennadius (classical studies), the libraries of foreign institutions in Greece, the Music Library of Greece (music) and the Technical Chamber of Greece (engineering).

Changing environment in Greek libraries: National library of Greece in its new premises

The National Library of Greece (NLG)⁴ was founded in 1832. In 1903, funding from the Vallianos brothers, prominent merchants, located the NLG to the imposing neoclassical marble building in the city centre of Athens. This building was designed by Theophil von Hansen, supervised by Ernest Ziller, and housed its collection until the relocation to its new premises in 2018 at Stavros Niarchos Foundation Cultural Centre (SNFCC).⁵

NLG holds one of the largest and most important collections in the country (more than 1,000,000 books, newspapers and journals; 5400 manuscripts; more than 15,000 incunabula, early or printed books). NLG is the par excellence depository and trustee for Greece's cultural heritage. Its mission is to perpetually locate, collect, organize, categorize, preserve and safeguard scientific and cultural artefacts created in Greece or internationally and related to Hellenism, by offering open and equal access to any interested party. The NLG's goal is to constitute an international centre of excellence for the study of Hellenism and for the preservation and expansion of the Greek culture.

In 2018, NLG relocated to its new building, which was implemented thanks to the donation of the

Stavros Niarchos Foundation and the auxiliary subsidy by the Greek State. This relocation marks the beginning of a new era for the NLG featuring enriched collections, updated digital services, modern applications, a new Public Library Section and a renewed relationship with the public. NLG currently offers a series of digital services namely Single-Sign on authentication service,⁶ a digital collections platform,⁷ a new website⁸ and e-reading⁹. NLG oversees an immense effort to restore and provide to the public the digital cultural heritage collections that were previously offered by public libraries. Having upgraded digital services and interconnection with other libraries at both a national and international level scientists and researchers will be able to have access to a rich and diverse material of Hellenism.

Together we stand: Synergies, best practice examples

Synergy (*συνέργεια*) is a Greek word literally meaning 'work together'. Greek libraries obviously collaborated in the past, but the idea of partnerships and collaboration has become stronger in the last 30 years to a great extent as a result of the European Community funded programs for libraries. The main partnerships are indicatively described below.

Hellenic Academic Libraries Link (HEAL-Link)

The best-known partnership is the Hellenic Academic Libraries Link,¹⁰ the consortium of academic libraries. It was formed in 1998, when the first three-year contract (1999–2001) was signed between Elsevier and eight university libraries. The consortium consists currently of 54 libraries, including academic libraries, research institutes of the public domain, the National Library of Greece, the Hellenic Parliament Library and the Academy of Athens among others. The Consortium currently provides access to several thousands of online journals, ebooks and databases.

Furthermore, HEAL-Link has developed infrastructures, such as the ILL system 'SmILLe' and the digital library for print-disabled users 'AmeLIB'. It also operates the Unit of Quality Assurance 'MOD-IPAV'.¹¹ A very important development is the coalition of many of its members to work in a common integrated library system called ILSaS and establish common cataloguing policies and practices. HEAL-Link is also a content developing organization, which through the project 'Kallipos', has provided over 500 open licensed textbooks to the higher education institutions. The Consortium works consistently to forward the concept of open access, open education

resources and open science to its institutions. The existing Hellenic Academic Libraries Union Catalogue¹² is currently expanding to a union catalogue that is anticipated to include all Greek libraries records. A network is also valid for interlibrary loan among participating libraries. Other retrieval tools are MITOS,¹³ the integrated library catalogue of the libraries that participate in the ILSaS infrastructure, and Zephyr,¹⁴ a portal to locate material in the catalogues of Greek academic libraries.

The collaboration of the Greek academic libraries had as a side effect the organization of an annual conference, the Panhellenic Academic Libraries Conference, in which progress and results were presented. The first conference took place in Ioannina in 1992. After the second year though, it transformed into an annual conference and despite a three-year hiatus, due to the peak of the economic crisis, it has been held annually for the last 25 years. The conference operates as a plateau for the exhibition of the latest developments in academic libraries and the introduction and cultivation of innovative concepts. It also provides many lifelong learning opportunities through workshops and tutorials. Furthermore, several international conferences have been hosted and organized in Greece, like KohaCon 2016 in Thessaloniki, ELAG 2017 in Athens and LIBER 2017 in Patras. All these events have helped the community to mature further and to gain the confidence required to organize large-scale international events.

General statistics for academic libraries, such as number of collection items, budget, personnel and circulation figures, are collected and processed annually by the Unit of Quality Assurance of Academic Libraries. The Unit also provides specialized user satisfaction surveys to any interested member of the HEAL-Link consortium.

Future library

Future Library¹⁵ was established in Veria in 2011 as a non-profit organization, aiming to transform Greek public libraries into unique centres of creativity, innovation and learning. Between the years 2012–2015 it was entirely funded by the Stavros Niarchos Foundation with the aim to develop a sustainable network of public and municipal libraries. The network, comprising more than 100 public and municipal libraries across Greece, was organized with the mandate to train librarians, to offer children's and digital services and to raise awareness about libraries in Greece. Other key donors are the Welfare Foundation for Social and Cultural Affairs, the Bill & Melinda Gates Foundation and the European Union.

Greek Libraries Network

The responsibility of the libraries network developed by Future Library was transferred to the NLG. Today the Greek Libraries Network¹⁶ consists of more than 220 libraries aiming to assist academic, research, public, municipal and school libraries in Greece to develop their user services. It encourages the sense of collaboration among libraries by introducing innovation methods with the goal to radically change the landscape of Greek libraries. A successful annual activity of the Network is the summer campaign.

Other partnerships

Committee for the Support of Libraries (Synergasia). The Committee for the Support of Libraries (*Synergasia*) was founded in 2003 aiming to contribute to the development of libraries in Greece. It consists of libraries representing foreign institutions in Greece, mainly embassies, and prominent Greek authorities and institutions. It is committed to free and open exchange of information. In this context, it invites experts from abroad with the support of the foreign institutions in its activities including conferences, lectures and workshops to present the latest developments in information technology and libraries. The Committee published an online magazine called *Synergasia* (2006–2014).

Hellenic Economic Libraries Network. The Hellenic Economic Libraries Network¹⁷ (HE LI N) was established in 2012 consisting of 10 libraries from respective institutions in economics, including universities, banks, research centres and government bodies in the region of Attica, Greece. Its mission is to promote cooperation among the member libraries by exchanging resources and by offering effective services to their user communities. To fulfil its mission, it has organized two conferences one in 2015 and in 2018 it organized a conference on financial literacy¹⁸ which is a subtopic of information literacy. It also organizes lectures on economic issues by well-known economists, book presentations, workshops for librarians and the general public and visits to the member libraries.

New library buildings and services

In Greece during the last three decades many library buildings were constructed, renovated or – at least – upgraded. They refer to all types of libraries and improve the country's infrastructure in providing better services to the users.

In the same period, in almost all Greek universities, new library buildings were built with European Union

funding for the development of libraries. Now, academic libraries have spacious buildings, which are well equipped with information technology infrastructure. Almost all of them have good WiFi coverage and offer printing facilities, individual study rooms and collaboration spaces. The modern facilities enable libraries to expand their services by hosting many events, such as exhibitions, public lectures; to offer innovative services and to foster collaboration with other organizations or institutional units. In such cases, the libraries are transformed from information units to cultural hubs. From the Library of the National Technical University of Athens, which opened in 1996 in a seven-floor fully operating building, to the brand new building of the Library of the School of Philosophy (National Kapodistrian University of Athens), which relocated to its new premises of 7500m² on 20 March 2019, Hellenic academic libraries are housed in modern facilities capable of offering a variety of services.

An example of a new academic library building is the Library of the Law School of the National and Kapodistrian University of Athens (NKUA). The new Library of the Law School¹⁹ was officially inaugurated on 4 April 2017 in the historic building of the Old Chemistry Laboratory, an architectural masterpiece and an important monument of the City of Athens. It is the outcome of the merging of the School of Law departmental libraries. The building, designed by the German architect Ernst Ziller, was constructed in the late 1870s, and for more than a century it housed the laboratories of the Faculties of Physics and Mathematics of the NKUA. The Hellenic Ministry of Culture has listed it as a historic monument. In the future, apart from the Library, the building will house the Museum of Natural Sciences and Technology and the centre of the University's cultural events and activities.

In parallel with the development of academic libraries' infrastructure, public libraries (*dimosies* and *dimotikes*) invested in new buildings or improved the existing ones across the country. A few examples of new buildings in this category include the new building of Veria Central Public Library²⁰ in West Macedonia prefecture, the Municipal Library of Alexandroupolis which is housed in a fully renovated old tobacco factory, and from the new building of Rethymno Public Library to Leros Municipal Library which is housed in an old traditional house fully restored to serve the community as a library in the centre of the island, significant steps have been taken for libraries.

The new Koventarios Public Library of Kozani building²¹ is another example of the significant steps

taken in the area of public libraries. The library building was inaugurated on 10 October 2018. The architectural solution incorporates the new building in a natural way with the urban fabric. It is easily recognized as the unique building block, enhancing ownership. The interdependence of three basic functional areas is visually distinctive (the library, the library's museum and a community space). It enhances the operational efficiency of each area while complementing the functionality of each one. Thus, it facilitates a financially sustainable operation and maintains the viability of the complex, while with the proper selection of shapes, colours and textures and the balance of internal and external spaces, the building touches the past and faces the future. The new building complex houses a very important collection of Greek Enlightenment period and functions as a community hub.

Moreover, buildings for specialized target groups have been built, such as the Municipality of Athens Children's Libraries, which are branches of the Central Municipal Library of Athens. While the Central Library houses the main collection and a separate children's department, the opening of two new libraries in the Park for Children and Culture²² in a different neighbourhood offers new services.

Since February 2016, the Infants' and Toddlers' Library of the Municipality of Athens has been located in the Park for Children and Culture and is the first library in Greece designed exclusively for young children. This unique library collaborates with the interdisciplinary non-for-profit association *Diavazontas megalono* ('By reading, I grow'). The library is divided into two sections, one for very young children (from a few days up to 3 years old) and the other is addressed to older children (up to 6 years old).

The Children's and Adolescent Library of the Municipality of Athens is also located in the Park for Children and Culture and is addressed to children aged 6 to 15. The collection includes Greek and foreign language books covering all areas of human knowledge. In the library, children enjoy a wide variety of board games, as well as computers for safe Internet surfing. The library organizes educational programmes in collaboration with schools, as well as events that meet the children's needs for knowledge, entertainment and creation.

Printed past, digital future: Open data, institutional repositories

In Greece, there are different initiatives, institutions and projects that are involved in making research data online available and accessible. Most importantly, they focus on educating and training users about the

meaning of open access and open data, as well as on using the tools and mechanisms for guaranteeing open access. Almost all academic and research institutions in Greece have developed institutional repositories in which they are uploading information produced by their research community, namely research papers, dissertations of different levels (i.e. Master's and Doctoral), projects results (i.e. research datasets, articles and deliverables). However, the availability of research data is still limited.

The most important initiative relevant to open access in Greece is *Openaccess.gr*. It was developed and supported by the NDC and includes information on international and national developments in the field of open access as well as the NDC's actions on open access. *Opendata* is a working group affiliated to Free Software/Open Source Software especially interested in open data. In the same context, there are various working groups focusing on different aspects of open access, namely open government,²³ open standards,²⁴ open source,²⁵ open content,²⁶ open hardware,²⁷ creative commons licences,²⁸ open education resources,²⁹ etc.

In an attempt to promote open access, a series of digitization projects were undertaken in the past 20 years in Greece. Among these are the digitization of the rich collection of newspapers and journals, dating back to the 18th century till today owned by the Hellenic Parliament Library. This project digitized more than 25,000 microfilms which are now available online³⁰ to all. In the same context, the NDC undertook a series of projects digitizing and providing access to diverse content. Specifically, it provides access to a series of open access journals and NDC selected resources,³¹ the national archive of PhD theses,³² the Argo portal (a bibliographic database),³³ SearchCulture.gr,³⁴ EKT digital database,³⁵ EKT library ejournals³⁶ and many more. A full list can be found at the NDC website.³⁷

These initiatives, infrastructures and consortiums are important for promoting and further disseminating research data and results produced by researchers, academics and research institutions in Greece. Most importantly, they assist in relating and linking relevant research data and outputs across countries, institutions, and research hubs and communities.

Supporting the role of the librarian: The role of the Association of Greek Librarians and Information Scientists

The Association of Greek Librarians (EEB)³⁸ was established in 1968 as the unique, established, national scientific association of Greek librarians. In

2004 after a constitutional change, it was renamed as the Association of Greek Librarians and Information Scientists (EEBEP). This change was a necessary result of the new demands and professional developments. It reflected the willingness of its members to adapt to the new conditions and create a new scientific association with a wide range of actions. Nowadays, EEBEP is the only collective body for professional librarians with more than 50 years of presence in the library arena in Greece. EEBEP is the national representative in IFLA, EBLIDA and NAPLE Forum.

Today, EEBEP's policy is formed by its constitution which states its objectives. The policy is also formed by the changes taking place at national, international, social, economic and cultural level, in an effort to define its role and to contribute with its actions to the development of the libraries in Greece.

The basic strategic pillar in which EEBEP includes all its efforts and the first item on its agenda is the mapping out of a Libraries' National Policy in Greece. For the implementation of this strategy, EEBEP had inaugurated an open public dialogue among its members. The results of this dialogue led to the creation of a Committee, which concluded that, among others, the nature of the problems in Greek libraries cannot be resolved within each individual library, and proposed several solutions for each library type and for the highest level of the hierarchy. According to those results, EEBEP implements its actions to support libraries and librarians in Greece. The Association has a crucial role in librarians' continuing education, representing both librarians and libraries to the national and international fora. It observes the state's policies in relative actions, expresses its opinion and has official representation in several governmental bodies. The Association organizes well-attended training seminars and maintains an up-to-date website.

EEBEP supports the international participation of Greek librarians and has organized several international events in Greece, such as the 22nd EBLIDA Annual Council Meeting & EBLIDA-NAPLE Conference. It was involved in the organization of several IFLA satellite meetings, mid-term IFLA Sections meetings and the IFLA President's Meeting 2017, in which IFLA initiated its World Global Vision campaign.

Library education in Greece, lifelong education, library schools and the context of library education

In Greece, there are currently three library schools offering curricula relevant to Archives, Library Science and Information Systems.

The Department of Archival, Library and Information Studies³⁹ of the University of West Attica⁴⁰ which is a Public Legal self-governed entity, founded in 1974, is located in the western suburbs of Athens, in Egaleo. The University hosts 35,000 students, making it the third largest University in Greece. It has five Faculties, 26 Departments and employs 2500 officers. The Department mainly aims to prepare information professionals for the labour market and to promote research in the relevant research areas. Currently, the Department offers a Master's programme in Information Management in Libraries, Archives and Museums, Doctoral programmes, runs a research lab on Information Management⁴¹ and has participated in various projects.⁴²

The Department of Archives, Library Science and Museology⁴³ of the Ionian University⁴⁴ was founded in 1984 and is situated in Corfu. The University currently has five Faculties and 12 Departments. The Department⁴⁵ aims to prepare information professionals addressing the needs of the relevant labour market and promote research by taking part in research projects. The Department offers a Master's degree in Information Science and relevant Doctoral programmes. In addition, it has three teaching and research laboratories⁴⁶: (a) Cultural and Historical Heritage Documentation, (b) Information Technologies and (c) Digital Libraries and Electronic Publications laboratory.

Finally, the Department of Library Science and Information Systems of the Alexander Technological Educational Institute of Thessaloniki⁴⁷ (ATEI) was founded in 1970 and currently has four Faculties and 18 Departments and offers 14 Master's educational programmes. ATEI is located in Thessaloniki and has 20,000 students. The Department⁴⁸ focuses on the fields of research, collection, processing, organization, management and dissemination of information, as well as on the means for recording knowledge, emphasizing the use of information technology. The Department offers a Master's on Managing Information in a Digital Environment⁴⁹ which participates in projects and offers consultation services to organizations and private companies.

Information literacy in Greek libraries: Best practice examples

Information literacy is a structural task for all types of libraries. Greek libraries cannot be an exception. Several libraries operate information literacy programmes to orient, instruct and attract users. The examples on information literacy below are indicative.

A pilot project by the Hellenic General Council of Libraries and the Institute of Educational Policy

During the school year 2017–2018, the Hellenic General Council of Libraries and the Institute of Educational Policy – which report to the Hellenic Ministry of Education, Research and Religious Affairs – cooperated in a pilot information literacy project. The target group was pupils of 15 to 18 years old. The focus of the pilot programme was twofold: to support the teachers towards selecting the topics and content of the creative assignments,⁵⁰ and to support the pupils in doing their assignments by understanding the literature and ways to access quality information in libraries. The project engaged librarians from public libraries to collaborate with high school teachers in the preparation of the creative assignments and to present the library services in the classroom. The pupils visited the libraries to search for further information on their given topics, as well as to utilize reference tools in order to collect, organize and cite their bibliography. As a result, all stakeholders attained experience from the collaborative project and a dialogue started between teachers and librarians to improve the educational process (Fermeli, 2018; Sfakakis, 2018). This, however, was a pilot and it is not certain that it will have a continuation.

Information literacy programmes in Greek academic libraries

University of Macedonia Library. The University of Macedonia Library offers a programme on information literacy.⁵¹ Within the programme the Library supports the scientific work of researchers and presents many indexes for measuring a journal's impact. It presents bibliographic databases to locate references. The Library provides services and reference tools in order to efficiently cover the students' information needs. It provides services to non-affiliated students as well and offers educational seminars to library users to support them to use the available library resources and mostly the electronic services.

University of Thessaly Library. Since 1997 the University of Thessaly Library has been organizing seminars adjusted to the information needs of undergraduate and graduate students as well as of academic teachers and administrative staff. In the beginning, the information literacy programme started with the presentation of the library, its resources, basic tools and services. Later (2000–2004), the Library planned an automated training programme on the use of its services combining theory with hands-on experience. Afterwards (2005–2008), an integrated user education

programme was implemented for all first-grade undergraduate and graduate students. Thus, the Library was recognized for its role in supporting learning for the University. Recently (2009–2018), the Library has been participating in the orientation courses for the University newcomers. Due to the financial crisis, the library's information literacy programme was affected by the decrease in library staff. However, the crisis functioned as an opportunity because the Library participated in the creation of the service iLSEAB (Balatzaras, 2018).

iLSEAB. iLSEAB⁵² is an information literacy programme co-funded by the European Union. It is a web service which operates to support end users and librarians of Greek academic libraries. The online information literacy platform includes information and training online material, Web 2.0 services for end users and librarians. The information material comprises information literacy courses for end users, best practices on information literacy, information literacy programmes policies, frequently asked questions, suggested bibliography and four modules for four disciplines. The modules can be used by undergraduate and graduate students in class and as a users' self-study.

Other information literacy programmes

Eugenides Foundation Library. The Library of the Eugenides Foundation⁵³ has been offering information literacy programmes⁵⁴ for several years. Being a special research library on technology and applied sciences, it offers educational and lifelong learning programmes to pupils of elementary schools (5th and 6th grades) and to high school pupils. The programme aims to create new knowledge based on discovering the resources of the library and to develop search skills. It also focuses on assisting pupils to understand the search methodology and the necessity to use a combination of online and printed resources for the research projects assigned at school.

Athens College Library. Worth mentioning is the programme of the Athens College Library⁵⁵ that began in the 1930s and is still very active today. It offers secondary education students all the necessary information literacy skills, through a very detailed programme, developed for each grade to assist them in their university studies and with lifelong learning (Papazoglou, 2005).

Epilogue for the future of Greek libraries

The notion of *history* – created by Herodotus of Halicarnassus in 5th century BC – gave humanity the ability to rethink about its past, present and future. Since then, written knowledge has played a crucial role in the evolution of human civilization. The preservation and storage of knowledge in libraries is the cornerstone of humanity's attempts to stay connected with their thoughts and ideas across generations.

That revolutionary vision of the past and of written information had happened because a new form of governance was in action during that period in this country: *democracy*. Only democratic societies further support their members in their efforts to become well-informed persons capable to take decisions. In classical Greece *Polis* was not simply the city and its infrastructure, but it was a combination of people, the oral and written tradition and the common goal for a brighter future for its members.

So, today's society, facing the changes from the *technological* revolution, can encourage the most important ingredient, *dialog*. This Greek word signifies the exchange of ideas when people get together to discuss an issue. It is the utmost expression of democracy and the basis for the freedom of expression. With dialogue as a medium, the best possible decisions are taken. Libraries, the democratic meeting places which connect people with knowledge and ideas, foster dialogue in their daily activities. Freedom of access to information and knowledge, as a notion supported by IFLA, is materialized through dialogue.

Greek libraries continue their long journey from the past to the future, ready to adapt to challenges and seize opportunities, interlinked with the main trends in the field, eager to serve their communities as discussion hubs and guards of memory.

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Notes

1. The main objective of the CSF was to support the structural development and adjustment of European regions whose development was lagging, through the allocation of the Structural Funds (Papazoglou and Semertzaki, 2001: 161).
2. Hellenic General Council of Libraries: <https://hgcl.minedu.gov.gr/index.php/en> (accessed 1 March 2019).
3. National Documentation Centre: <http://www.ekt.gr/en/mission> (accessed 28 March 2019).
4. National Library of Greece: <http://www.nlg.gr> (accessed 8 January 2019).
5. Stavros Niarchos Foundation Cultural Centre: <http://www.snfcc.org> (accessed 8 January 2019).
6. <https://sso.nlg.gr/login> (accessed 8 January 2019).
7. <https://digitalcollections.nlg.gr/nlg-repo/dl/en/index.html> (accessed 8 January 2019).
8. <https://www.nlg.gr> (accessed 8 January 2019).
9. <https://ereading.nlg.gr/el/?server=1> (accessed 8 January 2019).
10. Hellenic Academic Libraries Link: <https://www.heal-link.gr/about.php> and <http://www.seab.gr> (accessed 1 March 2019).
11. MODIPAV <https://mopab.seab.gr> (accessed 17 March 2019).
12. Hellenic Academic Libraries Union Catalogue: <http://www.unioncatalog.gr/index.php?lang=en> (accessed 1 March 2019).
13. Hellenic Academic Libraries Link Integrated Library Catalogue. MITOS: http://opac.seab.gr/*eng (accessed 28 March 2019).
14. Zephyr: <https://zephyr.lib.uoc.gr/index.html> (accessed 1 March 2019).
15. Future Library: <http://www.futurelibrary.gr/en/about-us> (accessed 28 March 2019).
16. Greek Libraries Network: <https://network.nlg.gr> (accessed 20 March 2019).
17. Hellenic Economic Libraries Network (HE LI N): <http://diovi.lib.unipi.gr/index.php/en> (accessed 1 March 2019).
18. In 2005 OECD defined *financial literacy* as ‘the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice develop the skills and confidence to become more aware of (financial) risks and opportunities to make informed choices, to know where to go for help, and take other effective actions to improve their financial wellbeing’ (OECD, 2012: 7).
19. Law School of the NKUA: <http://law.lib.uoa.gr> (accessed 1 March 2019).
20. The Veria Central Public Library was the only Greek library that was the recipient of the Bill & Melinda Gates Foundation award in 2010.
21. Koventarios Public Library of Kozani: <http://www.kozlib.gr> (accessed 1 March 2019).
22. After the Second World War the buildings of this park were built with funding from Norway. In 1957, upon being equipped with machinery, they were delivered to Greece as training facilities for the disabled victims of the war. For many decades, thanks to this great donation, hundreds of young people were taught various crafts, i.e. craftsmen, carpenters, watchmakers, tailors, shoemakers, and bookbinders. In 2014, these historic buildings were renovated with EU co-funding, and the park was renamed ‘Park for Children and Culture’.
23. <https://opengov.ellak.gr> (accessed 28 March 2019).
24. <https://openstandards.ellak.gr> (accessed 28 March 2019).
25. <https://opensource.ellak.gr> (accessed 28 March 2019).
26. <https://mycontent.ellak.gr> (accessed 28 March 2019).
27. <https://openhardware.ellak.gr> (accessed on 28/03/2019).
28. <https://creativecommons.ellak.gr> (accessed on 28/03/2019).
29. <https://oer.ellak.gr> (accessed 28 March 2019).
30. <https://library.parliament.gr/Portals/6/pdf/digitalmicrofilms.pdf?ver=2018-05-09-104050-780> (accessed 28 March 2019).
31. <http://www.ekt.gr/en/library/openaccess-search> (accessed 28 March 2019).
32. <https://www.didaktorika.gr/eadd/?locale=en> (accessed 28 March 2019).
33. <http://argo.ekt.gr/Argo/ArgoENU.html> (accessed 28 March 2019).
34. <https://www.searchculture.gr/aggregator/portal/info?language=en> (accessed 28 March 2019).
35. <http://www.ekt.gr/en/library/databases> (accessed 28 March 2019).
36. <http://www.ekt.gr/en/library/open-access-journals> (accessed 28 March 2019).
37. <http://www.ekt.gr/en/services> (accessed 28 March 2019).
38. Association of Greek Librarians and Information Specialists: <http://www.eebep.gr> (accessed 15 March 2019).
39. Department of Archival, Library and Information Studies: <http://alis.uniwa.gr> (accessed 7 March 2019).
40. University of West Attica: <https://www.uniwa.gr> (accessed 7 March 2019).
41. <http://kerkira.lb.teiath.gr/researchlab> (accessed 7 March 2019).
42. <http://kerkira.lb.teiath.gr/researchlab/index.php/projects> (accessed 7 March 2019).
43. Department of Archives, Library Science and Museology: <http://tab.ionio.gr/en> (accessed 7 March 2019).
44. Ionian University: <https://ionio.gr/en> (accessed 7 March 2019).
45. <http://tab.ionio.gr/en> (accessed 7 March 2019).
46. <http://tab.ionio.gr/index.php/en/research> (accessed 7 March 2019).

47. Alexander Technological Educational Institute of Thessaloniki: <https://www.teithe.gr/atei> (accessed 7 March 2019).
 48. Department of Library Science and Information Systems: <https://bit.ly/2J15N8h> (accessed 7 March 2019).
 49. <http://digilib.teithe.gr> (accessed 7 March 2019).
 50. *Creative assignments* are an educational activity that focuses on cultivating pupils' skills and competencies and familiarizing them with the requirements of the research.
 51. University of Macedonia Library information literacy programme: <https://www.lib.uom.gr/index.php/en/services-en/itemlist/category/196-information-literacy-en> (accessed 22 March 2019).
 52. iLSEAB: <http://ilseab.lib.uth.gr/portal/index.php/en> and <http://www.seab.gr/index.php/information-education/146-information-education.html#information> (accessed 1 March 2019).
 53. The Eugenides Foundation Library: <https://www.eef.edu.gr/el/to-idryma/bibliothiki> (accessed 1 March 2019).
 54. The information literacy programme at the Eugenides Foundation Library: <https://www.eef.edu.gr/el/to-idryma/bibliothiki/ekpaideytika-programmata-gia-sholeia/pliroforiaki-paideia/#> (currently in Greek) (accessed 1 March 2019).
 55. Athens College Library: <https://www.haef.gr/en/Library/VivliothikiKollegiouAthinon> (accessed 28 March 2019).
- Council of Libraries, General State Archives and Educational Radiotelevision,
 OECD (2012) High-level principles on national strategies for financial education. Paris: Organisation for Economic Cooperation and Development. Available at: <https://www.oecd.org/finance/financial-education/OECD-INFE-Principles-National-Strategies-Financial-Education.pdf> (accessed 27 January 2019).
- Papazoglou A (2005) Information literacy at the Athens College Library – Psychiko', In: *From Library Science to Information Science: Studies in Honour of GM Kakouris*, Athens: Typothito, pp.159–172. (In Greek)
- Papazoglou A and Semertzaki E (2001) Changes and developments in Greek libraries. *The Electronic Library* 19(3): 158–167.
- Semertzaki E (2006) Libraries in Greece from antiquity to current era. In: *Conference for 50 years of Eugenides Foundation*, Athens, 19 May 2006.
- Sfakakis M (2018) General Lyceums and libraries cooperate to implement Creative Assignments: A pilot project for libraries to support the educational process. (In Greek) In: *Conference: Libraries: The light of the universe, 15th International Book Fair*. Thessaloniki, Greece: Association of Greek Librarians and Information Scientists and Technological Educational Institute of Thessaloniki.
- Staikos KS (1997) *Libraries: From Antiquity to Renaissance and Important Humanistic and Monasterial Libraries (3000BC–1600AD)*. (Exhibition catalogue) Athens.

References

- Balatzaras M (2018) The development of the user education program at the Library and Information Centre of the University of Thessaly. (In Greek) In: *2nd HE LI N scientific conference. Economic libraries: Reservoirs of information and training*. Athens: Hellenic Economic Libraries Network. Available at: <https://www.docdroid.net/dXQs8Fa/balatzaras-diobi.pdf> (accessed 27 January 2019).
- Fermeli G (2018) Libraries as places to support learning and educational process: The case of creative assignments in Lyceums. (In Greek) In: *2nd HE LI N scientific conference. Economic libraries: Reservoirs of information and training*. Athens: Hellenic Economic Libraries Network. Available at: <https://www.docdroid.net/QV6EUeR/biblioohkes-de-diobi-fermelh-tel.pdf> (accessed 27 January 2019).
- Glossiotis G and Kyriakopoulou C (2013) Les bibliothèques grecques dans la crise économique. *Bibliothèque(s) – Revue de l'Association des Bibliothécaires de France* 70(Octobre): 98–102.
- Kyriakopoulou C and Glossiotis G (2009) Management and marketing strategies for the promotion of developmental policy of Greek Libraries. In: *Service strategies for libraries: Proceedings of the 2009 IFLA management and marketing preconference*, Athens, Greece, 19–21 August 2009, pp. 379–410. Athens: Ministry of National Education and Religious Affairs - General

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Impact of tailor-made information literacy provision on rural dwellers' participation in sustainable development targets in Nigeria: Implications for public library services to oral societies

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Abstract

This paper examined the impact of tailor-made information literacy provision on Nigerian rural dwellers' participation in three sustainable development targets. A mixed method research design comprised of field experimental approach, site visit and focus group technique was used to collect data that answered the five questions raised in the study. From the findings, rural dwellers who received information literacy provision participated more in the sustainable development targets than their counterparts who depended only on the existing information communication systems accessible to them. Information literacy provision to a sample of 20 households had a spill-over effect on the behaviour of non-sampled households of the same village. In conclusion, the triangulation of methods used in this study showed that rural dwellers' effective participation in development programmes can be achieved through contextual information literacy provision. This draws implications that are summarised into a model. Public libraries in Nigeria and in similar developing countries can explore the strategy conveyed in the model to launch effective outreach services to their rural dwellers.

Keywords

Information literacy provision, oral societies, public library services, rural dwellers, sustainable development

Introduction

The extant need to ameliorate rural dwellers engagement with lots of useful information in developing countries makes it necessary to examine how tailor-made information literacy provision might help. Information literacy is one of the multidisciplinary faces of librarianship, conceptualised in this paper as learning about information and knowing how to put information into practice. It is measured on people's awareness, access to and utilisation of information. *Awareness* is the state of knowing about specific information and how to traverse its environment. *Access* is the possession of the necessary and procedural details required to put information into use. *Utilisation* is a practical occurrence denoted on task accomplishment. These three indicators – awareness, access, and utilisation – are herein viewed as part of embodied actions and not as generic skills.

Conceptualising information literacy from this perspective, though untraditional, is substantial and synonymous with theories that see information literacy as a meta-competency grounded on real life phenomena (Lloyd, 2006, 2010a). Besides, facilitating information literacy practice among people is acceptable and aids information use in the long run (Andretta, 2011). In this paper, information literacy provision is all about teaching the study subjects what they need to know to subsequently participate in sustainable development. A topic-specific type of information literacy provision drives this goal, giving credence to

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discipline-specific or course-related information literacy instruction published among other information literacy instruction programmes (Cameron, 2004; Catts, 2000; Grassian and Kaplowitz, 2001).

We know that information literacy in formal educational systems results in proper and effective use of information within textual and technological settings. However, there are no studies on information literacy programmes for rural Nigerians, such as may relate rural dwellers' information utilisation experience to information literacy. Yet, thinking about information literacy among rural dwellers seems to be tied to their understanding and utilisation of information. This has to do with rural dwellers' ability to learn vocally, adapt, anticipate and create change – the elements of meta-competency. So, similar to educational environments where students are taught information literacy and sometimes assessed, this paper is set to evaluate the impact of information literacy provision on three sustainable development targets among a treated and controlled group.

Sustainable development targets selected for this study

Three targets of the United Nation's sustainable development goals (SDGs) were selected for this study. They represented the economic, environmental and social (equity) dimensions of sustainable development (<https://sdg.guide/chapter-1-getting-to-know-the-sustainable-development-goals-e05b9d17801>). Selection of the three targets was based on their relevance to the study population (as observed by the researcher during the pre-study survey). Hence, information literacy provision in this study was constructed around three targets as follows:

1. Nutritious consumption (a target in SDG 2 (<http://scalingupnutrition.org/nutrition/nutrition-and-the-sustainable-development-goals/>)). In this study, this target borders on prevailing food habits which are harmful for older persons, as well as good and nutritious food habits which the older persons in the villages under study overlook despite their affordability. Older persons were defined as those who are aged 60 and above. The World Health Organisation's (WHO) articles on nutrition for older persons provided the background for defining older persons and guided the outlining of food habits required by older persons to reduce the chances of suffering non-communicable diseases (<http://www.who.int/nutrition/topics/aging/en/>). The non-communicable diseases – that

is, diseases which are not infectious – were limited to diabetes, hypertension and osteoporosis. Hence, prevention of these three diseases through food habits constituted the sub-targets under nutritious consumption target. The selection of these three diseases was based on the researcher's pre-study inquiry on prevailing sicknesses among older persons in the villages selected for study. In addition to WHO articles, other peer-reviewed health-cum-dietary related publications were read from print and online sources to compile relevant information required under this target.

2. Desertification activities (a target in SDG 15 (<https://sustainabledevelopment.un.org/sdg15>)). In this study, this target focuses on two sub-targets, namely, deforestation activities and management of non-biodegradable wastes among the villagers under study. Here, indiscriminate felling of forest trees for timber and other subjective purposes, and improper disposal of non-biodegradable waste were addressed. These two sub-targets were covered because the pre-study inquiry showed that the villagers were involved in practices that jeopardise forestation and soil ecology. Scholarly materials accessed through Google Scholar as well as documents downloaded from United Nations' associated websites (<https://sustainabledevelopment.un.org/topics/desertlanddrought/publications>) aided the compilation of appropriate information for this target.
3. Access to justice (a target in SDG 16 (<https://sustainabledevelopment.un.org/sdg16>)). For this study, this target is limited to police and judiciary matters. Basically, drawing the attention of the villagers to the services of the Legal Aid Council of Nigeria – a charity-oriented legal institution which has an office in one of the cities close to the villagers under study – was considered. The researcher's focus on this target was influenced by the reality on the ground in the villages selected for this study. The aim is to help indigent people and poor families that have pending cases in the police and judiciary to access justice at no cost. All the information needed for this target was gathered locally from the office concerned.

Literature review

Sustainable development is a multifaceted term that cuts across different walks of life. It involves several

issues that include but are not limited to wise family planning, healthy food habit, hygiene matters, social responsibilities, civic rights, conservation of natural resources, financial prudence, gender equality, education, food production, good waste management, and others. Concisely, leading a lifestyle that will not endanger the overall wellbeing of the present society nor jeopardise the life of the future generation is the nitty-gritty of sustainable development. This idea is what brought the 193 member states of United Nations together in September 2015 to endorse a 15-year programme aimed at sustaining development all over the world. The philosophy of the programme pivots on three interrelated elements – economy, environment and society – and consequently furnished the proclamation of 17 sustainable development goals (SDGs) by the United Nations (<http://www.un.org/sustainabledevelopment/summit/>). Ultimately, achieving the goals requires individual participation of people of various gender, age and socioeconomic groups across the world. But urging community participation in development programmes has been an issue for several decades (Botes and Rensburg, 2000). Conscious of the varied ‘definitions of development’ (Sumner and Tribe, 2008:11), but referring to all as one, some researchers observed that many development schemes in Nigeria fail to achieve their purpose in rural areas (Otto and Ukpere, 2014). One seminal reason for this situation is the information communication gap (Schramm, 1964). Yet, several suggestions on how to enhance rural dwellers’ participation in development programmes has been published (Islam and Ahmed, 2012; Momodu, 2002; Nwachukwu and Ezech, 2007; Uhegbu and Okereke, 2006; Ukpog, 1993). But none of the available studies considered the possibility of exposing rural dwellers to contextualised information literacy programmes, as a way of bridging the information gap.

Of course, the vital role that information plays and why it must not be denied to rural people has been adequately reported (Diso, 2005; Etebu, 2009; Harande, 2009; Ibrahimah, 1986; Issa, 1998; Kamba, 2009; Momodu, 2012; Munyu, 2000; Okiy, 2003; Sturges and Neill, 1998; Ukachi, 2007). Despite the exposition, instances have been published which show that rural dwellers still wallow in ignorance (Oluwatosin and Oladepo, 2006) because of a dearth of practicable information (Uzuegbu, 2016). As such, the absence of a workable solution to the problem of information gap in rural areas has lingered. And as time goes by, the volatility of living without the right information in rural areas continues to rise. Yet, usable information, especially that generated through research and contemporary knowledge, is

increasingly available. The problem appears to be how to practically assist rural people to access information and utilise it effectively. Regrettably, researchers in Nigeria are giving more attention to finding out the mediums that deliver information to rural dwellers and the extent to which rural dwellers are satisfied with those mediums. Although such studies are necessary, it becomes monotonous as they flood the literature: they observe the need to improve information services to rural dwellers and still offer no practicable strategies to solve the problem. This is an extant drawback that constitutes a literature gap; and, by implication, sustainable development can remain a far cry to rural dwellers if exigent realistic solutions are not charted. Uzuegbu (2016) observes the efforts of the mass media, public libraries’ outreach services and allied information delivery channels accessible in rural areas but still finds them ineffective in providing practicable information to rural dwellers. Whereas mass media contents most times appear unsuitable to rural information needs, the present-day ethos of public libraries in Nigeria holds no promises for the rural populace.

Decades ago, Aboyade (1984) conjectured the need to make libraries relevant for non-literate communities in Nigeria. Igbinovia (2016) opines that libraries are vehicles for attaining SDGs. The public library system in Nigeria readily claims the role of informing the public which includes people living in remote areas and villages (Aina, 2006; Issa et al., 2012). However, neither their outreach programmes nor rural services and branches, where such exist, have proved effective in the literature for stemming the information utilisation gap in rural areas. Comparably, researchers find that rural dwellers in developing countries access the little information accessible to them through the radio (Lwoga et al., 2011; Nakabugu, 2001; Nazari and Hasbullah, 2008), television (Bachhav, 2012; Bello and Obinne, 2012; Ekoja, 2003; Elly and Silayo, 2013; Ifukor, 2013; Meyer, 2004), agricultural extension workers (Ayoola, 2001; Iwuchukwu and Igbokwe, 2005; Umunna, 2008), mobile phones (Gakuru et al., 2009; Kalusopa, 2005), and more essentially, through friends, neighbours, relatives and colleagues (Lwoga et al., 2011; Okwu and Daudu, 2011). This situation questions the suitability of public libraries for meeting the information needs of rural dwellers. Besides, encouraging effective engagement with knowledge-based and practicable information among rural dwellers in Nigeria is quite beyond the usual method of sharing reading materials, relying on news broadcasts and depending on agricultural extension programmes

(Uzuegbu, 2016). The public library system needs to re-strategize its services to find its perceptible niche in the rural populace. After all, librarianship in the 21st century seeks its users in conformance to the principles of information repackaging, content analysis, abstracting and indexing services, selective dissemination of information, knowledge management (in explicit and tacit contexts), information brokerage and others. So, with a central purpose of finding out ways to ameliorate rural dwellers' engagement with lots of useful information, this paper considers topic-specific information literacy provision programmes as a strategy for the library profession to become effective in outreach services to rural dwellers in Nigeria.

Provision of information literacy to various publics has been well received as a role of libraries. But public libraries, especially in Nigeria, have not been able to undertake this function directionally. Skov's (2004) review on the broadness of this function for public libraries in general is however noted, seeing that information literacy now is a complex of models that cut across print, technology and social practice contexts, with public libraries serving a variety of communities that often consist of these contexts. With this paper focused on rural dwellers, almost an oral society, information literacy provision by public libraries will be to enhance its target group's social responsibility and community participation. This pursuit complies with ANZIL's framework for information literacy (Bundy, 2004). Thus, public libraries' facilitation of rural dwellers information seeking, and acting as counsellor on their overall information-seeking process through suitable modes of constant interaction (Kuhlthau, 2004) may well become the essence of information literacy provision to them.

Research in information literacy has progressed in the last two decades. What was hitherto pigeonholed in prescribed skills associated with the use of explicit sources of information is now experiencing research-based modifications that observe information literacy practice in various endeavours. This variation has resulted in new theories that view information literacy as information practice (Lloyd, 2007, 2010b; Lloyd-Zantiotis, 2004); as informed learning (Bruce, 2011; Bruce et al., 2013); and as information behaviour (Hepworth and Walton, 2013). The underlying fact in these theories is that information literacy is all about understanding and adapting to a given information environment as well as accessing and effectively utilising relevant information that is available in that environment. Hence, the information environment must not necessarily be textual, technological or both as often presumed in traditional models of

information literacy. The traditional models of information literacy (ACRL, 2000; Bent and Stubbings, 2011; Bundy, 2004; Catts and Lau 2008; CILIP, 2004; Lau, 2006) were deeply construed from formal educational perspectives. But naturally, information literacy can occur anywhere. To Lloyd (2010b), information literacy is ontology-based and can be describe as a way of knowing an information landscape and how to navigate it. Here, an information landscape consists of the people, artefacts, texts, tools and bodily activities that characterise this practice that this information landscape is embedded in. Evidently, information literacy has been demonstrated in workplace milieus, in social settings and community environments (Bowles-Terry, 2012; Bury, 2011; Candy, 2002; Cullen et al., 2011; Erich and Popescu, 2010; Franklin, 2005; Lloyd et al., 2013; Lloyd-Zantiotis, 2004; Soleymani, 2014; Williams et al., 2014). This aptly explains why information literacy has been described as a socio-cultural phenomenon (Lloyd, 2007) as well as an interpersonal occurrence (Bruce, 1997; Bruce, 1999; Gunton et al., 2012; Lloyd, 2009; McMahon and Bruce, 2002; Yates et al., 2009). It is a totally context-based experience (Andretta, 2007; Lloyd, 2010b; Lupton, 2008). However, its manifestation in rural contexts has not been specifically reported in the literature. By presuming that information literacy manifestation in social settings is akin to what will happen in rural environments, it is therefore pertinent to observe the relational occurrence of information literacy in a rural setting.

Designing and providing information literacy instructions in locally relevant formats that meet rural dwellers' information needs is not out of context. Andretta (2011) relates to this as she opines that facilitating information literacy practice among people is acceptable and aids information use in the long run. Horton (2013) supports the same idea when he notes that assisting people to learn and/or identify, describe and articulate in exact terms and language and according to information need, and search effectively and efficiently for useful information to meet the need, is part of information literacy practice and reflects the age-long practice of librarianship. Moreover, the exploration of varied suitable approaches to assist people of various backgrounds become informed, access and use information effectively was upheld as information literacy exercise at the Alexandria Proclamation in 2005 (Garner, 2006). These notions become more imperative when considering people in oral societies which largely consist of people who are not learned and cannot become learned, but still need to be carried along on the bandwagon of the knowledge society. This category of people will

naturally depend on information literates to practise and benefit from information literacy. However, there is no available paper to show how this new phenomenon works or what the situation is so far.

Purpose of the study

This study examines the impact of tailor-made information literacy provision on rural dwellers' participation in three sustainable development targets in Nigeria. To achieve this, the study seeks to answer the following questions:

1. To what extent did rural dwellers who received information literacy provision vary in awareness, access to and utilisation of information on selected sustainable development targets as compared to those who did not?
2. As time passed, did existing information communication systems impact rural dwellers' awareness, access to and utilisation of information pertaining to selected sustainable development targets?
3. Did information literacy provision to a small group influence the behaviour of the entire rural dweller population (as a spill-over effect) towards the sustainable development targets selected for this study?
4. Can information literacy provision improve effective information service delivery to rural dwellers in Nigeria?
5. What are the perceived challenges to rural dwellers' participation in sustainable development?

Methodology

To answer the questions raised in this study, a mixed method research design that included field experimental approach, site visit method and focus group technique was implemented. This triangulation, as characteristic of mixed method designs, was considered relevant for a study such as this which requires a synthesis of quantitative and qualitative data to show the impact of one variable on another, and understand how and why the impact occurred (Creswell, 2009; Creswell and Clark, 2007).

Field experimental approach

Two villages in Nigeria were selected. One village was regarded as a treatment group and the other village was considered as a control group. Both villages were selected from a poll of 68 villages falling under 17 autonomous communities that constitute Olororo Clan in Umuahia South Local Government Area of

Abia State, Nigeria. See a map of the study area as Figure 1.

Criteria for selecting two villages. The selection of the study villages was based on their homogeneity. This includes similarities in household population, accessible information communication systems and literacy level (measured here as ability to read and write in English). Furthermore, villages selected had separate marketplace, farm land areas, and social infrastructure which were not shared with other villages. Other factors considered include the researcher's familiarity with the villages and denizens in terms of language, beliefs and culture. (See Table 1.)

Study population. The population of the study comprised 128 households, with each household regarded as a respondent. This number is a summation of households in Umuchukwu and Mgbedala villages. The homogeneity of the study population lies basically on certain institutional factors that might influence the experiment. (See Table 1.)

Sample and sampling. To ensure equal representation in the experiment, a randomised sampling technique was used to select 20 respondents from each village. This resulted in a total sample of 40 respondents for the study. The sampling technique is standardised and provided every household in the population an opportunity to be nominated for the sample through an open ballot picking. Every household in both villages appointed a representative to do the ballot picking and stand as their respondent. Household representatives were not below the age of 18 and not above the age of 70. The researcher considered this age bracket to be mentally active in economic, environmental and socially-related issues of the society.

Data collection instrument. A structured interview schedule was used to collect data for the field experiment. As the study respondents comprised illiterates as well as those who do not write as frequently as they speak, the structured interview schedule was considered appropriate because its questions (fielded in respondents' mother tongue) provided no opportunity for the illiterate respondents to respond out of context. Thus, the researcher asked questions contained in the schedule to respondents and also recorded respondents' answers accordingly. Although structured, the instrument was designed in a way that elicited comparable (quantitative and qualitative) data from respondents, cutting across respondents' cognition of the phenomenon studied vis-à-vis awareness, access to and utilisation of information pertaining to

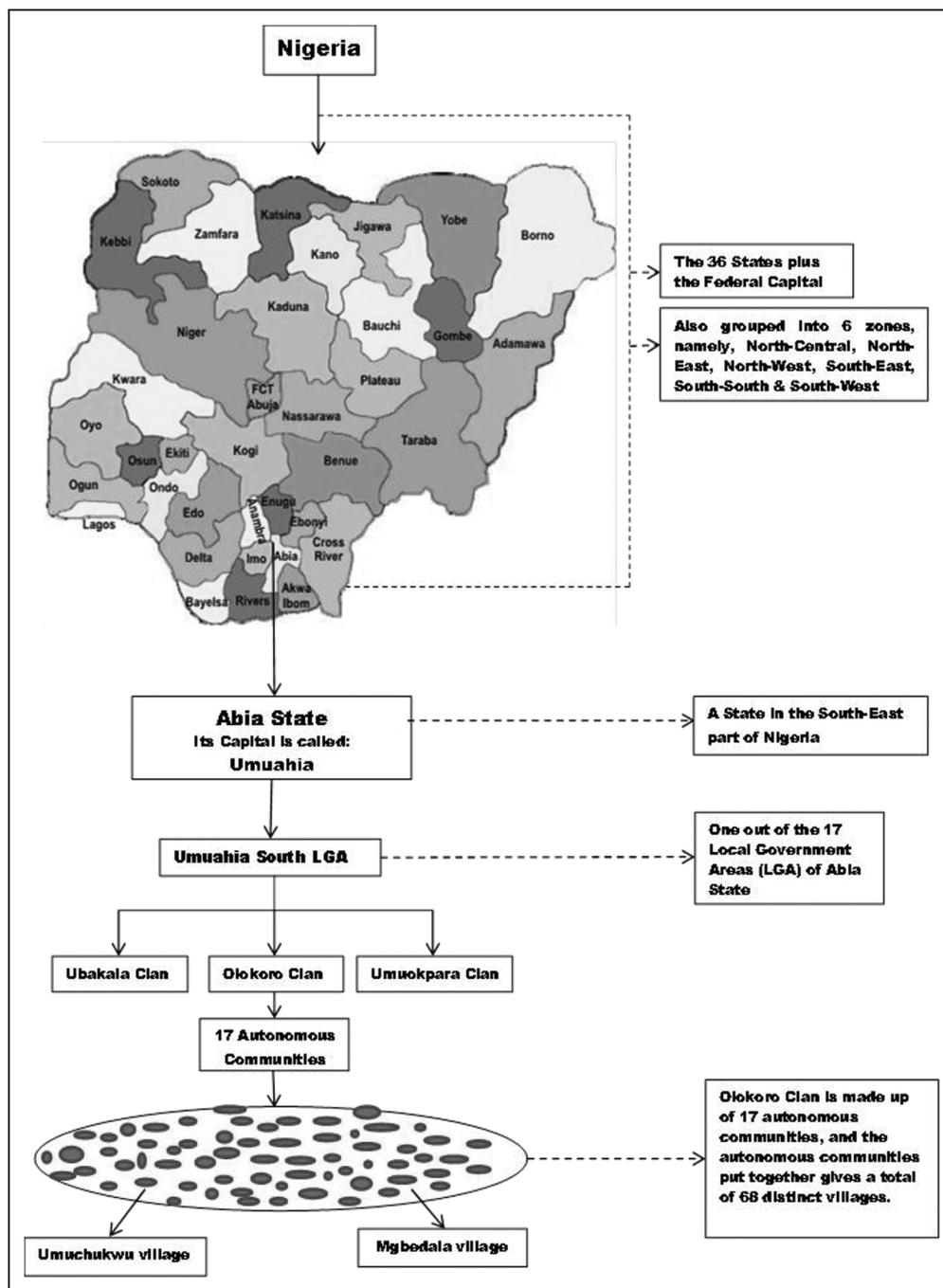


Figure 1. A map of the study area.

selected sustainable development targets. The instrument (see Appendix) served both for baseline and post-intervention data collections.

Validation and reliability of the data collection instrument. The instrument passed content (purpose) and format validation by a Professor of Library and Information Science.

Replication test. The researcher replicated the field experiment on three different blocks created within the treated group in order to confirm its precision.

Data collection procedure for the field experiment. House-to-house visit was employed to collect data from the sample. The researcher visited sampled households to interview them on a one-on-one interactive mode. Visitation times to each sampled household varied in treatment and control groups. In the treatment group – Umuchukwu village – the researcher and his team made four visits to this group, stretched across a period of 14 months. In the first visit (in the first month), a sample was drawn from the population, and baseline data were collected. In the second visit (held in the second month),

Table 1. Profile match of the selected villages.

Village profile listing	Umuchukwu Village	Mgbedala Village
Household population of the village	66	62
Average literacy level of the village	43%	41%
Any separate marketplace(s) for the village?	Yes	Yes
Any separate farmland area(s) for the village?	Yes	Yes
Any separate church(s) for the village?	Yes	Yes
Any separate school(s) for the village?	Yes	Yes
Any separate healthcare centre(s) for the village?	Yes	Yes
Information communication systems accessible in the villages:		
TV	Yes	Yes
Radio	Yes	Yes
Newspapers		
Mobile telephone network	Yes	Yes
Internet connectivity	Yes	Yes
Education and research institutions	Yes	Yes
Community health centre	Yes	Yes
Agricultural workshops/seminars/conferences	Yes	Yes
Agricultural extension workers	Yes	Yes
Village leadership	Yes	Yes
Churches	Yes	Yes
Posters, handbills and billboards	Yes	Yes

Source: Researcher's pre-study survey conducted in February 2016.



Figure 2. Members of the treatment group receiving information literacy instructions on nutritious consumption.

representatives of the sampled households assembled at their village hall to receive treatment – information literacy provision. The treatment was a collection of appropriate information on three sustainable development targets, compiled from various sources, repacked in context and format, and communicated to the sample in their local dialect. The researcher employed pictorial displays using a digital projector to support the communication.

(See Figure 2.) The treatment was an interactive lecture and lasted for one-and-half hours. While the sample learnt about the sustainable development topics selected for the study, their proper understanding of the lecture was ensured through question and answer session. In the third visit, undertaken in the 14th month (one year after treatment was administered – just to be sure of any impact the intervention may have caused or not), the researcher's

trained assistant visited sampled households one after another to collect the second-round data. At this time, the respondents could not relate the data collection with the 'seminar' as no one talked about it. Afterwards, within the same 14th month, the fourth visit was made. In this visit the entire population was invited for an open interactive discussion at their village hall where the researcher reappeared to moderate, interact with and round-up the 'seminar'. In all, the researcher's meetings with the treatment group were concealed from the control group.

In the control group – Mgbedala village – the researcher met with this group three times. The visits spread across a period of 14 months and took place during the same periods as visitations to the treatment group. In the first visit, the sample was drawn, and the baseline data were collected. In the second visit (one year after baseline data were collected– again, to be certain about the impact the intervention may have generated or not), a trained assistant collected a second round of data from the sample. Fielding the same questions for the control group twice was considered necessary because as time passed, respondents may have had the opportunity to learn more about the sustainable development targets through ways that may be interesting to know. In the third visit, the entire population was invited for an open interactive discussion with the researcher at their village hall. Similarly, the researcher's meetings with the control group were not disclosed to the treatment group.

Site visit method

A non-participant observer method, enabled by one-on-one interview with research subjects, was adopted to complement the quantitative data collected and analysed from the field experiment. Applied exclusively to the treated group, the aim was to identify and recognise unforeseen outcomes of the field experimental intervention (Bachrach, 2004). The researcher's team visited the 66 households that comprise the treatment group (Umuchukwu Village) to gain insights into household members' behaviour towards the sustainable development targets studied. Interviews were granted only to people aged 18 and above. Notes were taken and photos captured. The focus of the interview and observation was limited to cases where evidences tied to the sustainable development targets under study are obtainable.

Focus group technique

To further enrich the quality of data collected in this study, a focus group technique was implemented. The meeting was open for all households in the villages

studied. The meetings were held differently for each group, inside each group's village hall. The discussions, which lasted for about two hours in each group, were moderated by the researcher who was accompanied by three research assistants that took on-the-spot notes of the discussions. In the control group, 18 household representatives above the age of 18 honoured the invitation. Their names were obtained and codes administered to them. The themes discussed were: SDGs and participants' challenges to participation in them; the impact of existing information communication systems on participants' knowledge of sustainable development targets; the functional information provision system that participants need.

In the treatment group, 25 household representatives above the age of 18 attended the discussion. Likewise, their names were taken with codes assigned to each participant. Out of these 25, 12 participants were from the non-sampled households during the field experiment and thus were moderated to discuss how the information literacy provision (treatment) to their colleagues benefitted them, in comparison to existing information communication systems accessible to them. The remaining 13 participants whose households were sampled during the field experiment were moderated to discuss how far the information literacy provision administered to them suited their view of what an ideal information service delivery should be. Afterwards, all participants from the treatment group aired their views on why they were not participating, and may not continue to participate in the global call for sustainable development.

Data analysis method for the study

Data collected in this study were analysed quantitatively and qualitatively. Analysis conformed to certain norms which delineated what constitutes awareness, access to and utilisation of information, as indicators of information literacy practice. (See Table 2.)

Getting the respondents to participate in the study

The Chief of each village was visited to obtain permission for the study. They were told that the exercise was a volunteer seminar that would profit them (without mentioning that it was part of a research for publication). The Chiefs in both villages complied and summoned their denizens to participate in the seminar. As appreciation for their participation, the researcher offered participants snacks and soft drinks in all the meetings held.

Table 2. Delineation of norms for information literacy practice.

Indicators	Norms
Awareness of information	Respondents' knowledge of the selected sustainable development targets.
Access to information	Respondents' evidence of knowledge of the selected sustainable development targets.
Utilisation of information	Respondents' actual actions (doing in reality those things) akin to the selected sustainable development targets.

Source: The researcher's self-developed norms.

Table 3. Gender and age distribution of the experiment participants.

	Gender	Under 18	18–20	21–30	31–40	41–50	51–60	61–70	71+	Totals
Treatment group	Male	0	1	2	7	2	1	0	0	13
	Female	0	0	1	3	1	1	1	0	7
Control group	Male	0	1	2	9	1	1	1	0	15
	Female	0	1	0	3	1	0	0	0	5
	Totals	0	3	5	22	5	3	2	0	40

The study duration and materials

The study lasted for 18 months, beginning from February 2016. Of this, 15 months were spent on the field while about three months were used to analyse data and prepare the paper. The study was self-funded. The researcher incurred many expenses in the processes of travelling several times to the research sites, providing refreshments for the study population, giving a stipend to three research assistants recruited for the study, and accessing relevant materials. Some major materials used for the study at various stages included Internet network connection, overhead projector, computer, power generating set and their connecting accessories.

Ethical concerns

The study respondents were assured of their anonymity. Copies of the interview schedule and the pieces of information gathered from focus group participants contained names and codes that were carefully saved in an unnamed folder, stored electronically, password protected and accessible only to the researcher.

Controlling biases and limitations

The field experimental design was developed through a randomisation process. The control measures were appropriate, and homogeneity criteria were drawn. Regarding site visit method, the researcher ensured that only natural attitude or behaviour of research subjects was captured. To achieve this, the researcher adopted the non-participant approach to visit the subjects' homes without formal notice. On focus group

method, the researcher's role was tied to moderation. Participants' contributions during discussions were not influenced by the researcher.

Results

Outcome of the field experiment

Participation in the field experiment was successful in both the treatment and control groups (villages), with 20 household representatives each. Of the entire participants, 70% were males and 30% females. The majority of the participants (55%) were in the age bracket 31–40. The profile of the participants, distributed across the two groups, is shown in Table 3.

The absence of participants who are below 18 years old and above 70 years of age was expected, as indicated in the sample design.

Baseline data. Data collected from the treatment and the control group at the beginning of this study were comparatively similar. For instance, each group had a 5% of general knowledge of sustainable development – that is, those who have heard about the term sustainable development and stated its meaning correctly. On nutritious consumption, 60% of respondents in each group were not aware that food habits and lifestyles help to prevent diabetes, hypertension and osteoporosis diseases. No respondent in either group was able to describe any food habit or lifestyles relevant for preventing any of the three diseases. On desertification activities, respondents in both groups could not tell whether felling of forest trees without planting new ones is safe for the environment or not, while 70% in

each group were in the habit of disposing of non-degradable wastes on their farmlands. Such sameness occurred on the third target – access to justice – where respondents from both groups were completely unaware of any free legal service in town. These were the situations before intervention began in the treatment group.

Post-intervention data. One year after completion of intervention in the treatment group, post-intervention data collected from the treatment and the control groups showed significant variance between the two groups. This variance is caused by the intervention. As seen in Table 4, the respondents' general knowledge of sustainable development and its associated selected targets improved considerably in the treatment group as compared to the control group. For example, the treatment group respondents who knew about sustainable development and stated its meaning correctly rose from 5% (at baseline) to 75%. The 60% of respondents who were not aware that food habits and lifestyles help to prevent diabetes, hypertension and osteoporosis diseases at baseline went down to zero percent in post-intervention data.

Commensurate evidences were given to support responses in Table 4. In the treatment group, many respondents referred to the intervention by describing the researcher's information literacy provision as their source of awareness. The majority of the respondents (75%) in the treatment group were able to describe the meaning of sustainable development, with some of them narrating it beyond the three targets covered in the study. Specifically, representatives of seven households talked about the 17 SDGs with the researcher and sought to understand how each goal affected them. But to the three targets in focus, respondents were able to identify and describe certain food habits and lifestyle associated with at least one out of the three diseases, with more than 90% of them implementing the food habits and lifestyle at least once every week. Table 4 gives us a total picture of what transpired across the three sustainable development targets.

Ultimately, there is a salient point to draw from the experiment result. Both groups were naturally exposed to some existing information communication systems broadly outlined in Table 1. However, the information literacy provision administered to members of the treatment group resulted in a more conscious participation in sustainable development targets than seen in the control group whose members depended solely on friends, physicians, television and newspapers as information communication systems. Succinctly, the effect of the intervention in the treatment group can be corroborated by the conversely

little impact caused by existing information communication systems accessible to members of the control group, and on the comments from treated group respondents during the site visit. These revelations bring answers to the first two research questions as thus:

1. Rural dwellers who received information literacy provision increased in awareness, access to and utilisation of information about sustainable development targets than their controlled counterparts who did not receive provision.
2. As time passed, the existing information communication systems in the villages had no significant impact on rural dwellers' awareness, access to and utilisation of information pertaining to sustainable development targets.

Findings from the site visit

The 66 households that comprised the treatment group were the focus in this section. One year after the completion of intervention, households in the treatment group were visited by a research assistant. Special attention was given to the 46 households that were not sampled for field experiment. The aim was to investigate the spill-over effect of the treatment administered to the sampled households, by observing the behaviour of subjects in the non-sampled households towards the sustainable development targets selected for this study. For example, many local food items, some foot wear for exercise, special waste bins devoted to non-biodegradables, and other indications were seen among the sampled households during the site visit. (See Figure 3.)

But for the non-sampled households of the treatment group, the following information was deduced from them through interview and observation.

1. Three households, out of the 46, stopped disposing of non-degradable wastes on their farmlands seven months before the site visit. (See Figure 4.) Why? Because their sampled colleagues told them about the dangers of such to their farmlands. Hence, they separated their waste bins into biodegradables and non-biodegradables. As seen at the site, these households used waste plastic bags to make fire for cooking, sold waste plastic bottles to waste-plastic merchants in the city, and emptied metal canes at a non-degradable waste pit earmarked by the government. The non-degradable waste pit is sited 29 kilometres away from the village. The commitment of these households to travel such a distance for

Table 4. Distribution of post-intervention data.

Items	Response Scales	% Average of Responses			
		TG	CG		
General Knowledge: about sustainable development	Heard of sustainable development and said its meaning	75%	10%		
	Heard of sustainable development but cannot say its meaning	25%	10%		
	Heard of sustainable development but does not know its meaning	5%	5%		
	Never heard of sustainable development let alone its meaning	0%	75%		
Nutritious Consumption: preventing diabetes, hypertension, and osteoporosis diseases through food habit and lifestyle	Extent of awareness	Extremely aware (i.e. awareness cut across the three diseases)	75%	0%	
		Moderately aware (i.e. awareness cut across two diseases)	13%	10%	
		Slightly aware (i.e. awareness is only for one disease)	13%	35%	
		Not aware at all	0%	55%	
	Extent of access	Described much about their food habits/lifestyle	30%	0%	
		Described little about their food habits/lifestyle	40%	0%	
		Knows some food habits/lifestyle but cannot describe	30%	0%	
		Does not know about food habits/lifestyle let alone to describe	0%	100%	
	Extent of utilisation	Adopted relevant food habits/lifestyle always (daily)	43%	0%	
		Adopted relevant food habits/lifestyle sometimes (weekly)	45%	0%	
		Adopted relevant food habits/lifestyle rarely (monthly or so)	10%	0%	
		Never adopted any food habits/lifestyle	2%	100%	
	Desertification Activities: indiscriminate felling of forest trees without planting new ones, and improper disposal of non-degradable wastes	Extent of awareness	<i>Felling of trees</i>		
			Strongly agreed that felling of forest trees without planting new ones is not safe for the environment	35%	0%
			Slightly agreed that felling of forest trees without planting new ones is not safe for the environment	40%	5%
			Disagreed that felling of forest trees without planting new ones is not safe for the environment	0%	0%
Does not know if felling of forest trees without planting new ones is safe for the environment or not		25%	95%		
<i>Non-biodegradable wastes</i>		Always recycled/reused/sold/poured them into special waste pit	30%	0%	
		Sometimes recycled/reused/sold/poured them in special waste pit	55%	0%	
		Sometimes poured them on farmlands as part of general waste	15%	35%	
		Always poured them on farmlands as part of general waste	0%	65%	

(continued)

Table 4. (continued)

Items	Response Scales	% Average of Responses		
		TG	CG	
Extent of access	Mentioned very much certain actions that can curb desertification	20%	0%	
	Mentioned a few actions that can curb desertification	35%	0%	
	Knows but could not mention any action that curb desertification	45%	0%	
	Does not know of actions that can curb desertification	0%	100%	
Extent of utilisation	Always (daily) performed actions that curb desertification	50%	0%	
	Sometimes (weekly) performed actions that curb desertification	40%	0%	
	Rarely (monthly or so) performed actions that curb desertification	10%	0%	
	Never performed actions that curb desertification	0%	100%	
Access to Justice: indigents' knowledge and fulfilment of criteria for subscribing to Legal Aid Council of Nigeria – a charity-oriented legal institution in Umuahia	Extent of awareness	Knows very well about the free legal services and its criteria	70%	10%
	Knows somewhat about the free legal services and its criteria	20%	0%	
	Not really sure about the free legal services and its criteria	10%	0%	
	Not aware of the free legal services and its criteria	0%	90%	
Extent of access	Mentioned exact address and criteria for free legal services	40%	0%	
	Attempted to describe address and criteria for free legal services	15%	5%	
	Knows but cannot describe the address and criteria	45%	0%	
	Does not know the address and criteria for free legal services	0%	95%	
Extent of utilisation	Benefitted several times from the free legal service scheme	3%	0%	
	Benefitted in few occasions from the free legal service scheme	7%	0%	
	Told friends about the scheme but does not know if they benefitted	48%	0%	
	Never benefitted, never told anybody about the scheme	42%	100%	

TG = Treatment Group; CG = Control Group

the purpose of emptying waste metal canes is remarkable. Besides, in one of these households, their three children who are below 12 years old had been taught about non-degradable wastes by their parents and are consciously complying with the family's new habit towards non-biodegradable wastes.

2. The Village Chief of the treated group banned the felling of trees in the village's forest, and

must give permissions to any villager that must do so. The ban came three months after the intervention, even though the Chief's household was not a part of the sampled households. The Chief himself said his cabinet took the decision to ban deforestation activities after he learnt their implications from one of his cabinet members who participated in the information literacy treatment.



Figure 3. A treatment respondent's sports footwear for regular evening exercise and an orange tree planted in reaction to replacing felled trees.



Figure 4. Non-biodegradable vs. biodegradable waste bins captured during site visit.

3. A mother of 59 years old who is suffering from osteoporosis disease gave up her habit of eating bread or cracker biscuits every morning. She said that she took her decision because her friend who participated in the experiment told her about the bone-damage-effect of 'sodium' usually contained in baked foods such as bread and biscuits. According to her, this was one thing her physician never told her, but agreed with her that she should abstain from sodium (including too much salt) when she inquired about it from him.
4. In one household, a 21 year-old man was found released from prison through the services of Legal Aid Council of Nigeria. The man had been in prison awaiting trial for more than three years. But he was released after a participant in the field experiment informed the family about the free legal service in town. However, the family of the freed man paid some money to the Legal Aid Barrister that handled the case, against the understanding that Legal Aid Council of Nigeria renders a free-of-charge service to indigent families. But all the same, the family of the released man testified that what they paid to the Legal Aid solicitor was not in any way comparable to what they had been asked to pay by a private lawyer in the past, which they could not afford, leading to the prolonged stay of their son in prison.
5. In another household, the members described the meaning of sustainable development across its 17 goals published by the United Nations. They were willing to know how each goal affected them and other villagers. Yet, their quest for this information and knowledge started after interacting with a participant in the field experiment.
6. A total of 33 households, out of the 46 non-sampled households in the treated group, recited some of the sustainable development knowledge imparted to their sampled counterparts, admitting that their colleagues (the 20 sampled households) shared what they learnt from the treatment with them.

These observations are clear indications that information literacy provision to a group of 20 people influenced the behaviour of the majority of a village in the context of the sustainable development targets selected for this study. While this revelation answers the third research question of this study, it further implies that contextual information literacy provision

Table 5. Gender and age details of the focus group participants.

	Gender	Age 21–30	Age 31–40	Age 41–50	Age 51–60	Total
Treatment group	Male	0	3	9	2	14
	Female	0	3	4	4	11
Control group	Male	5	2	3	0	10
	Female	4	1	1	2	8
	Total	9	9	17	8	43

is capable of activating oral information sharing and contextualised information literacy practice among rural people.

Discoveries from focus group discussions

Table 5 shows the details of the focus group participants. In both groups, males outnumbered the female participants. Most of the participants in the treatment group fall between the ages of 41 to 50. The reason for this is because most adults from the treatment population had become conscious of the programme after benefitting from the intervention. During introduction, many of them stated that they cancelled their itineraries just to participate in the focus group meeting. This is unlike the control population that had a majority of young adults (21–30) whose attendance in the meeting was primarily because they were not engaged with some work. What unfolded from the focus group discussions answers the fourth and the fifth research questions of this study.

Discussions on information service delivery systems to rural dwellers in Nigeria. Participants from the control population found the television, radio, newspapers, mobile network connectivity and other existing information communication systems irrelevant to their day-to-day update on development issues. Apart from one participant, all other participants from the control population had not heard about the sustainable development agenda launched by United Nation in September 2015 let alone knowing what to do to participate in it. The gentleman that had heard about sustainable development got to know through his son studying geography in university. For instance, Mr Chido Azuonye (Participant C5) said, ‘How will I know about a programme launched overseas when I have not known what is going on in my own country?’ It could be imagined how such unawareness remained among the participants despite the television and radio which many of the participants owned in their homes. For this, many of the participants blamed the government for an irregular electricity supply with which they could follow news through television. As to using a radio with batteries, some participants

expressed the lack of time and chance to tune in and listen to news broadcasts over radio. Others complained about the cost involved in purchasing batteries regularly which often die within a few hours of use. Meanwhile, 10 participants expressed no interest in watching television or listening to radio programmes, and yet, could not read fluently in order to resort to local newspapers for information. What are called local newspapers here are not even local per se, as participants observed they included state and national dailies written in English language. To a large extent, participants from the control group lamented the lack of effective means of keeping them updated with information and relevant knowledge, and wished for a way out of the situation in the nearest future. Their suggestions to this effect included the need for appropriate government agencies to keep ties with their rulers for steady conveyance of beneficial information to them. When the library institution, as a way forward, was brought up by the moderator, none of the participants had anything to contribute. Eventually, two participants spoke. Both of them (Participants C7 and C11) agreed in their views that a library – ‘defined as a room where books are stored, read, and borrowed’ – would be good for their children and not for them who are largely illiterate. Yet, none of the participants had heard of any library that serves as a building devoted mainly to the verbal exchange of information and knowledge rather than to reading and borrowing of print materials, and thought that such a type of library would suit them ‘If such is real about libraries’ – said Mr Michael Ikeadigim (Participant C7).

From the participants in the treatment population, the information literacy provision treatment was commended. Out of the 25 household representatives present in the discussion, 12 participants – whose households were not sampled during the experiment – acknowledged the intervention. They were not the direct subjects of the intervention, but benefitted from its spill-over effect. These 12 participants recounted their curiosity to know what their selected colleagues learnt from the information literacy treatment, which made them obtain knowledge about the sustainable

development targets from their treatment colleagues. Many of them declared the profitability of such knowledge and expressed an interest in continuing the practices they have learnt from their colleagues. For instance, Mrs Olejuru Uhiara (Participant Tn-s23) said: 'I never knew I was weakening my bones and joints with my habit of eating too much table salt.' So, in comparing the information literacy treatment from which they benefitted indirectly with the role of existing information communication systems, the 12 participants saw no importance for the existing systems. Chief Dickson (Participant Tn-s17) said:

All my life, I have been listening to radio and watching television programmes, but I have never learnt that *achara* is very good for my health... No wonder our fore-parents that included *achara* regularly in their meals lived stronger and longer than we live nowadays.

Achara – known as spear grass in English – is a vegetable that is often included in native soups of the villagers studied, but was increasingly ignored by many of these villagers in recent times. The tender leaf of *achara* (before it flowers and becomes inedible) is rich in magnesium, potassium (a balance to excess sodium), calcium and other vital minerals. However, the remaining 13 participants whose households were sampled during the experiment commended the information literacy treatment administered to them. Two participants from this cluster were honest enough to plead successively for continuity of the intervention – requesting the researcher to visit their village from time to time. In particular, Mr Mike Ndulaka (Participant Ts4) said: 'Sir, that lecture you gave us about a year ago is exactly the kind of thing we want from time to time, across varied issues that will benefit us.' Mrs Adanma Orife (Participant Ts13) said: 'Can we be having you once every three months to lecture us on any topic of our interest? Just come, you don't have to spend on us; instead you and your team shall be our guest.' In short, all the participants commented that the existing information communication systems accessible to them have not been suitable and may remain unsuitable for communicating vital information to them. Why? Because the systems, most times, fail to strengthen their clarity and understanding of information and thus affect their utilisation of lots of meaningful development information available in the society.

Discussions on challenges to rural dwellers' participation in sustainable development. Participants from the control and treatment populations gave similar reasons for not participating in the SDGs. Lack of awareness is the

common reason. Virtually all the participants were ignorant of the term sustainable development and neither knew its goals nor how they could participate from their communities. Miss Jane Nnaukwu (Participant C14) said: 'I have not heard about sustainable development goals until you told us in this hall. How can I then participate in what I do not know?' This was the same point participants from the treatment population expressed, noting it as their hindrance to participating in the sustainable development agenda before they received a lecture on the topic.

Regarding continuity of the sustainable development agenda by the treatment population, participants enunciated that their hindrances would be tied to circumstances that might be beyond their control. Mr Andy Uwaeme (Participant Ts10) said:

I will practise all the things I have been taught about sustainable development goals, but I shall not use my hard-earned money to buy trees to plant for the lawless fellows in our village... I shall only plant trees if I receive seedlings for free... but I will not use my own money to buy seedlings.

Participant Ts9 (Mrs. Adaku Ogumka) said:

If the trees to plant are economic trees which I can plant around my home and benefit from, fine and good, I will plant. But, the problem is that most of such trees around homes will always be cut down in no time because of the danger they pose to electric wires and buildings during storms.

So, participants believe that their continuation in sustainable development practices is dependent on broad range of circumstances that reflect on participating individuals' benefits.

Summary of results

The five questions asked in this study have been answered successfully. A cause and effect relationship is spotted in the study. Rural dwellers who received information literacy provision participated more in the sustainable development targets than their counterparts who depended only on the existing information communication systems accessible to them. Beside this, information literacy provision to a sample of 20 households produced a spill-over effect on the behaviour of non-sampled households in the same village, within the context of the sustainable development targets studied. Comparatively, information literacy provision (as an oral interactive exercise) was widely accepted by the rural dwellers as a suitable means of delivering information services to them.

Noting that their major hindrance to information utilisation and participation in development programmes is lack of awareness – the state of not knowing or not grasping what a programme is all about and how to contribute successfully in its implementation – the rural dwellers believe that regular provision of information literacy-based lectures is the way forward.

Implications and discussions

The overall insight gained from this study provides some ideas for thinking about information literacy. As much of the time used in this study was channelled to the treatment population, the participants, at a time, became very committed and responsive and expressed their wish that the study should become a continual programme for them. Though this phenomenon might be natural, it however draws salient connotations which may not be divorceable from information literacy practice among rural dwellers or oral-communicating groups. Basically, the impact of the researcher's tailor-made information literacy provision, as a facilitation kind of exercise, is noteworthy. Facilitation, as important as it is in various conventional learning contexts is found indispensable in rural dwellers' participation in sustainable development. Facilitation is an essential part of a teaching or instructing exercise. In this paper, it was the act of simplifying information for the rural people to understand and utilise. This is what friends, physicians, television and newspapers, as prevailing actors and systems behind information access and utilisation in the villages studied could not achieve. And, there are no studies to show whether the case is different with other rural endeavours. So, while the meta-competency idea of Lloyd (2006) on information literacy proved factual in this study, facilitation turned out to be the basis of its factuality. Several occurrences observed in the treatment group of this study, such as change in lifestyle, attitude and actions essential for sustainable development were triggered through facilitation. By implication, effective utilisation of information among rural dwellers requires contextual facilitation, which must be executed through interpersonal interactive communication. This further implies that information literacy among illiterates can be an orally-communicative practice that is enabled on specific social-cultural norms. Traditionally, the librarianship profession deploys facilitation exercises in the form of user orientation programmes, and nowadays, as information literacy instructions. This culture is also required now to enhance effective information utilisation among rural

dwellers and people who are not competent in textual and technological means of learning.

Notice in this study that the treated population practised information literacy through their oral communications. To participate in the sustainable development targets, the subjects met and verbally interacted with their friends and relatives, shared information, asked relevant questions, read meanings and made out information from responses, and consequently acted on the information they obtained. This is the nature of their information literacy landscape. However, many rural dwellers lag behind in this practice. They lag behind because they do not understand the people, artefacts, texts, tools and bodily activities – the implied constituents of Lloyd's (2006) information landscape. In rural reality, this is the same thing as knowing: the right people to meet to get relevant information; what information is available to the public; which information is important and of use; where and how to access required information; and the actual actions mandatory for using and benefitting from certain information. Accordingly, these are the information literacy elements that the control group of this study lacked in the context of sustainable development targets outlined for the study, which on the contrary, were mostly exhibited by the treatment group members. This, again, supports this paper's notion that information literacy – which has been recognised as a context-based phenomenon (Andretta 2007; Lloyd, 2007, 2010b; Lupton 2008) – can be practised among rural dwellers through context-specific facilitations.

Training rural dwellers to utilise information effectively is essential. The ineffective impact of friends, physicians, television and newspapers in helping the controlled population participate successfully in sustainable development corroborates the findings reported in Uzuegbu (2016). And the absence of the library institution in this list increases the worry that public library institutions in Nigeria are not reaching out to the rural populace. Of course, several research studies into sources and channels of information for rural people in developing countries have not found libraries to be a significant information source (Bachhay, 2012; Ekoja, 2003; Gakuru et al., 2009; Kalusopa, 2005; Lwoga et al., 2011; Meyer, 2004; Nakabugu, 2001; Nazari and Hasbullah, 2008; Umunna, 2008). But as a viable way forward, a model is herein proposed based on revelations from this study. (See Figure 5.) This model has prospects for ending the age-long problem of getting rural dwellers to participate in development programmes (Nwachukwu and Ezech, 2007; Otto and Ukpere, 2014; Ukpogon, 1993), and can fittingly be deployed by the

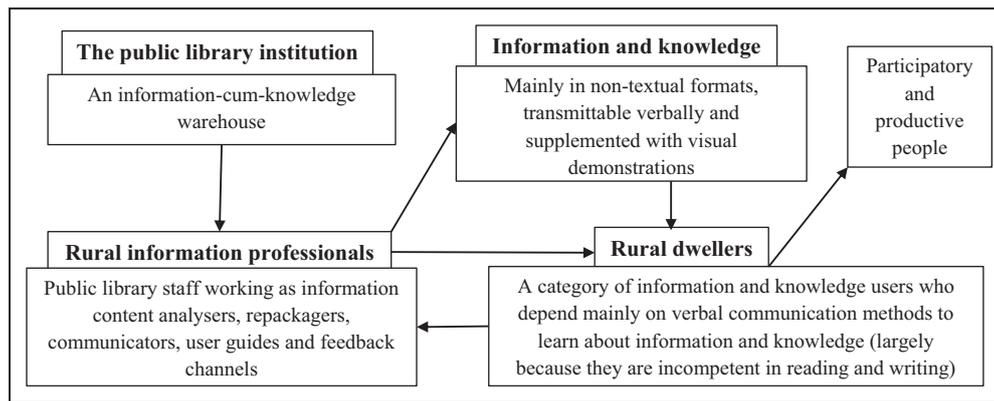


Figure 5. A process/action model for improving public libraries' outreach services to rural dwellers in Nigeria.

public library system in Nigeria to reach out effectively to rural dwellers.

The process model above shows how information and knowledge pertaining to three targets in the SDGs were accessed by the researcher, repackaged and imparted to the study respondents using their local dialect. Ordinarily, the information on SDGs is mostly textual and mainly available on the Internet. But, to make the knowledge accessible to the respondents in this study, the researcher formatted the contents, repackaged the knowledge and transmitted it to the people at their convenience and in the language and format they understand. In the same way, the public library institution in Nigeria can replicate the same approach. To do so, they need to recruit and or train their staff in the scope of undertaking impact-oriented outreach services to rural dwellers. Staff must be acquainted with rural information environments – understand and decode the nature of information required among a rural populace as well as the nodes through which information is effectively communicated and utilised by the rural people. To be effective, staff must be able to access relevant information contents despite their layout, and analyse and repackage information into formats that suit the rural people. Having the information ready, staff must go out of the traditional library building to meet with the rural dwellers or at best set up physical extension structures in the rural areas to facilitate regular and lasting contacts with the rural people. Until this reality is incorporated in today's librarianship, useful information and knowledge will increasingly go unutilised by rural dwellers in Nigeria and in other similar developing countries.

Conclusion and recommendation

Using a triangulation of methods, this study shows that information literacy provision has an impact on rural dwellers' effective participation in sustainable

development programmes. This study has shown how a treatment group's behaviour transformed, even after one year, to embrace practices that enforce SDGs. The reason for the transformation is apparently tied to the revelation that information literacy provision (as an oral interactive exercise) to the rural dwellers studied is comparably a more effective way of communicating information to them and enhancing their understanding and application of information in the right way and for the right purpose.

This finding draws suggestions for the library and information profession. As a majority of rural dwellers in Nigeria depend predominantly on verbal communication methods to learn about information and knowledge, public libraries in Nigeria and in similar developing countries can explore the strategy experimented in this paper to launch effective outreach services to their rural dwellers. While the strategy is well represented in an action model proposed in Figure 5, actualising it requires the redefining of public libraries' ethos to include and implement information literacy provision services in non-textual formats, transmittable through verbal interactive communication, supplemented with visual demonstrations. Secondly, the recruitment or retraining of public library staff to become content analysers, information repackagers, information communicators is ripe in the interest of orally-communicating societies.

In addition, further studies can be conducted on this topic. The study population can be revisited in the future to find out if the tailor-made information literacy provision still has impact on them or not. Beside this, more studies can be carried out to investigate the impact of information literacy provision on other endeavours of rural dwellers.

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References

- Aboyade BO (1984) Making the library relevant in a non-literate society: The future of library and information services in Nigeria. *Nigerian Libraries* 20: 89–97.
- ACRL (Association of College and Research Libraries) (2000) *Information Literacy Competency Standards for Higher Education*. Chicago, IL: Association of College and Research Libraries. Available at: www.acrl.org/ala/mgrps/divs/acrl/standards/standards.pdf (accessed 11 April 2017).
- Aina LO (2006) Information provision to farmers in Africa: The library-extension service linkage. In: 72nd IFLA general conference and council, Seoul, Korea, 20–24 August 2006.
- Andretta S (2007) Phenomenography: A conceptual framework for information literacy education. *ASLIB Proceedings* 59: 152–168.
- Andretta S (2011) Evaluating information literacy educators' practices before and after the course facilitating information literacy education: from tutor to learner-centred. *Health Information & Libraries Journal* 28: 171–178.
- Ayoola GB (2001) *Essays on the Agricultural Economy 1: A Book of Readings on Agricultural Development Policy and Administration in Nigeria*. Ibadan: TMA.
- Bachhav NB (2012) Information needs of the rural farmers: A study from Maharashtra, India: A survey. *Library Philosophy and Practice*. Available at: <http://digitalcommons.unl.edu/libphilprac/866/> (accessed 23 June 2017).
- Bachrach E (2004) The value of site visits. *Perspectives* (Spring/Summer): 3. Available at: <http://www.grginc.com/documents/TheValueofSiteVisits.pdf> (accessed 2 August 2017).
- Bello M and Obinse CPO (2012) Problems and prospects of agricultural information sources utilization by small scale farmers: A case from Nassarawa State of Nigeria. *Journal of Communication* 3(2): 91–98.
- Bent M and Stubbings R (2011) *The SCONUL Seven Pillars of Information Literacy: Core model for Higher Education*. London: SCONUL. Available at: <http://www.sconul.ac.uk/sites/default/files/documents/coremodel.pdf> (accessed 4 May 2017).
- Botes L and Rensburg DV (2000) Community participation in development: Nine plagues and twelve commandments. *Community Development Journal* 35(1): 41–58.
- Bowles-Terry M (2012) Library instruction and academic success: A mixed-methods assessment of a library instruction program. *Evidence Based Library and Information Practice* 7(1): 82–95.
- Bruce C (2011) Information literacy programs and research: An international review. *Australian Library Journal* 60(4): 326–333.
- Bruce CS (1997) *The Seven Faces of Information Literacy*. Adelaide: Auslib Press.
- Bruce CS (1999) Workplace experiences of information literacy. *International Journal of Information Management* 19: 33–47.
- Bruce CS, Somerville MM, Stoodley ID, et al. (2013) Diversifying information literacy research: An informed learning perspective. In: Hepworth M and Walton G (eds) *Developing People's Information Capabilities: Fostering Information Literacy in Educational, Workplace and Community Contexts*. London: Emerald, pp. 223–240.
- Bundy A (ed.) (2004) *Australian and New Zealand Information Literacy Framework: Principles, Standards and Practice*. 2nd edn. Adelaide: ANZIL.
- Bury S (2011) Faculty attitudes, perceptions and experiences of information literacy: A study across multiple disciplines at York University, Canada. *Journal of Information Literacy* 5(1): 45–64.
- Candy PC (2002) *Lifelong Learning and Information Literacy*. White Paper prepared for UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic. Available at: <http://www.nclis.gov/libinter/infolitconf&meet/candy-paper.html> (accessed 23 May 2017).
- Cameron L (2004) Assessing information literacy. In: Rockman IF and Associates (eds) *Integrating Information Literacy into the Higher Education Curriculum: Practical Models for Transformation*. San Francisco, CA: Jossey-Bass, pp. 207–236.
- Catts R (2000) Some issues in assessing information literacy. In: Bruce C and Candy P (eds) *Information Literacy around the World: Advances in Programs and Research*. Wagga Wagga: Centre for Information Studies, pp. 271–283.
- Catts R and Lau J (2008) *Towards Information Literacy Indicators*. Paris: UNESCO. Available at: http://www.uis.unesco.org/Library/Documents/wp08_InfoLit_en.pdf (accessed 14 July 2017).
- CILIP (Chartered Institute of Library and Information Professionals) (2004) *Information Literacy*. Available at: <http://www.cilip.org.uk/cilip/advocacycampaigns-awards/advocacy-campaigns/information-literacy/information-literacy> (accessed 29 April 2017).
- Creswell JW (2009) *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Thousand Oaks, CA: SAGE.
- Creswell JW and Clark PVL (2007) *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: SAGE.
- Cullen R, Clark M and Esson R (2011) Evidence-based information-seeking skills of junior doctors entering the workforce: An evaluation of the impact of information literacy training during pre-clinical years. *Health Information and Libraries Journal* 28(2): 119–129.
- Diso LI (2005) Information, production, transfer, and delivery: Mass information work and television journalism's

- dilemma in Nigeria. *International Information and Library Review* 37: 285–294.
- Ekoja II (2003) Farmers' access to agricultural information in Nigeria. *Bulletin of the American Society for Information Science Technology* 29(6): 21–23.
- Elly T and Silayo EE (2013) Agricultural information needs and sources of the rural farmers in Tanzania: A case of Iringa rural district. *Library Review* 62(8/9): 547–566.
- Erich A and Popescu C (2010) The impact of information literacy in the academic education environment. *Studii de Biblioteconomie și Știința Informării/Library and Information Science Research* 14. Available at: <http://www.lisr.ro/en14-erichpopescucr.pdf> (accessed 30 May 2017).
- Etebu AT (2009) Information for rural communities: A solution for sustainable development in the Niger Delta. *Library Philosophy and Practice*. Available at: <http://digitalcommons.unl.edu/libphilprac> (accessed 4 March 2017).
- Franklin KY (2005) The importance of information literacy: Insights from the next generation of scholars. In: ACRL twelfth national conference, 7–10 April 2005, Minneapolis, Minnesota, USA. Available at: <http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/pdf/franklin05.pdf> (accessed 29 April 2017).
- Gakuru M, Winters K and Stepman F (2009) Innovative farmer advisory services using ICT. In: Cunningham P and Cunningham M (eds) *IST-Africa conference proceedings*. IIMC (International Information Management Corporation). Available at: http://ist-africa.org/Conference2009/outbox/ISTAfrica_Paper_ref_85_doc_2692.pdf (accessed 5 August 2017).
- Garner SD (ed.) (2006) *High-level Colloquium on Information Literacy and Lifelong Learning, Bibliotheca Alexandrina, Alexandria, Egypt*, November 6–9, 2005. Report of a Meeting Sponsored by the United Nations Education, Scientific, and Cultural Organisation (UNESCO), National Forum on Information Literacy (NFIL) and the International Federation of Library Associations and Institutions (IFLA). Available at: <http://eprints.rclis.org/3829/1/alexfinalreport.pdf> (accessed 4 August 2017).
- Grassian ES and Kaplowitz J (2001) *Information Literacy Instruction: Theory and Practice*. New York: Neal-Schuman.
- Gunton L, Bruce CS and Stoodley I (2012) Experiencing religious information literacy: Informed learning in church communities. *Australian Library Journal* 61(2): 119–132.
- Harande YI (2009) Information services for rural community development in Nigeria. *Library Philosophy and Practice*. Available at: <http://digitalcommons.unl.edu/libphilprac/271/> (accessed 17 September 2017).
- Hepworth M and Walton G (2013) Introduction—information literacy and information behaviour, complementary approaches for building capability. In: Hepworth M and Walton G (eds) *Developing People's Information Capabilities: Fostering Information Literacy in Educational, Workplace and Community Contexts*. Library and Information Science, Vol. 8. London: Emerald, pp. 1–11.
- Horton FW (2013) *Overview of Information Literacy Resources Worldwide*. Paris: United Nations Educational, Scientific and Cultural Organization (UNESCO). Available at: http://globelics2009dakar.merit.unu.edu/papers/1238296264_MA.pdf (accessed 3 June 2017).
- Ibrahimah MZ (1986) Public libraries and rural development. Paper presented at *Nigeria Library Association seminar*, Amedu Bello University Zaria, Nigeria.
- Ifukor MO (2013) Channels of information acquisition and dissemination among rural dwellers. *International Journal of Library and Information Science* 5(10): 306–312.
- Igbiovvia M (2016) Libraries as vehicle to sustainable developmental goals (SDGs): Nigerian's current status and outlook. *Library Hi Tech News* 33(5): 16–17.
- Islam S and Ahmed SMZ (2012) The information needs and information-seeking behaviour of rural dwellers: A review of research. *IFLA Journal* 38(2): 137–147.
- Issa AO (1998) The information needs of rural dwellers in Kwara state. In: Tijjani A, et al. (eds) *Issues in Information Provision: Nigerian Perspectives*. Zaria, Nigeria: NALISS, pp. 13–21.
- Issa AO, Omopupa KT and Salman AA (2012) Rural information provision for national development: A study of Kwara North senatorial district of Kwara State, Nigeria. *PNLA Quarterly* 76(3). Available at: <http://unllib.unl.edu/LPP/PNLA%20Quarterly/PNLAQ76-3.html> (accessed 28 May 2017).
- Iwuchukwu JC and Igbokwe EM (2005) Lessons from agricultural policies and programmes in Nigeria. *Journal of Law, Policy and Globalization* 5. Available at: <http://www.iiste.org/> (accessed 21 July 2017).
- Kalusopa T (2005) The challenges of utilizing information communication technologies (ICTs) for the small-scale farmers in Zambia. *Library Hi Tech* 23(3): 414–424.
- Kamba MA (2009) *Access to Information: The Dilemma for Rural Community Development in Africa*. Available at: http://globelics2009dakar.merit.unu.edu/papers/1238296264_MA.pdf (accessed 26 September 2017).
- Kuhlthau CC (2004) *Seeking Meaning: A Process Approach to Library and Information Services*. 2nd edn. Westport, CT: Libraries Unlimited.
- Lau J (2006) *Guidelines on Information Literacy for Lifelong Learning: Final Draft*. Available at: <http://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-en.pdf> (accessed 13 July 2017).
- Lloyd A (2006) Information literacy landscapes: An emerging picture. *Journal of Documentation* 62(5): 570–583.
- Lloyd A (2007) Recasting information literacy as socio-cultural practice: Implications for library and information science researchers. *Information Research* 12(4). Available at: <http://InformationR.net/ir/12-4/colis34.html>. (accessed 1 May 2017).

- Lloyd A (2009) Informing practice: Information experiences of ambulance officers in training and on-road practice. *Journal of Documentation* 65(3): 396–419.
- Lloyd A (2010a) *Information Literacy Landscapes: Information Literacy in Education, Workplace and Everyday Contexts*. Oxford: Chandos.
- Lloyd A (2010b) Framing information literacy as information practice: Site ontology and practice theory. *Journal of Documentation* 66(2): 245–258.
- Lloyd A, Kennan MA, Thompson KM, et al. (2013) Connecting with new information landscapes: Information literacy practices of refugees. *Journal of Documentation* 69(1): 121–144.
- Lloyd-Zantiotis A (2004) *Working information: Developing a grounded theory of information literacy in the workplace*. PhD Thesis, University of New England, Armidale, NSW, Australia.
- Lupton M (2008) *Information Literacy and Learning*. Blackwood, Australia: Auslib Press.
- Lwoga ET, Stilwell C and Ngulube P (2011) Access and use of agricultural information and knowledge in Tanzania. *Library Review* 60(5): 383–395.
- McMahon CA and Bruce CS (2002) Information literacy needs of local staff in cross-cultural development projects. *Journal of International Development* 14(1): 113–127.
- Meyer H (2004) Information use in rural development: The new review of information. *Behavior Research* 4(1): 109–125.
- Momodu MO (2002) Information needs and information seeking behaviour of rural dwellers in Nigeria: A case study of Ekpoma in Esan West local government area of Edo State, Nigeria. *Library Review* 51(8): 406–410.
- Momodu OM (2012) Rural libraries and community development in Nigeria. *International Journal of Basic, Applied and Innovative Research (IJBAIR)* 1(3): 91–97.
- Munyū H (2000) Information and communication technologies for rural development and food security: Lessons from field experiences in developing countries. In: *COAIM expert workshop on the role of ICTs in rural development and food security*, Rome, Italy, June 2000. (Abstract) Available at: <http://www.odi.org/sites/odi.org.uk/files/odiassets/publications-opinion-files/4509.pdf> (accessed 2 June 2017).
- Nakabugu SB (2001) The role of rural radio in agricultural and rural development translating agricultural research information into messages for farm audiences. *First international workshop on farm radio broadcasting*, 19–22 February 2001, Rome, Italy.
- Nazari MR and Hasbullah AH (2008) Farmers' approach and access to information and communication technology in the efficient use of modern irrigation methods. *European Journal of Scientific Research* 21(1): 37–44.
- Nwachukwu IN and Ezech CI (2007) Impact of selected rural development programmes on poverty alleviation in Ikwuano LGA, Abia State, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development, Kenya* 7(5): 1–17.
- Okoye RB (2003) Information for rural development: challenge for Nigerian rural public libraries. *Library Review* 52(3): 126–131.
- Okwu OJ and Daudu S (2011) Extension communication channels' usage and preference by farmers in Benue State, Nigeria. *Journal of Agricultural Extension and Rural Development* 3(5): 88–94.
- Oluwatosin O A and Oladepo O (2006) Knowledge of breast cancer and its early detection measures among rural women in Akinyele Local Government Area, Ibadan, Nigeria. *BMC Cancer* 6(1): 271.
- Otto G and Ukpere WI (2014) Rural development projects in Nigeria: The case of Rivers State. *Mediterranean Journal of Social Sciences* 5(3): 604–612.
- Schramm W (1964) *Mass Media and National Development: The Role of Information in the Developing Countries*. Redwood City, CA: Stanford University Press.
- Skov A (2004) Information literacy and the role of public libraries. *Scandinavian Library Quarterly* 37(3). Available at: <http://slq.nu/?article=information-literacy-and-the-role-of-public-libraries> (accessed 14 June 2017).
- Soleymani MR (2014) Investigating the relationship between information literacy and academic performance among students. *Journal of Education and Health Promotion* 3(95). DOI: 10.4103/2277-9531.139677.
- Sturges P and Neill R (1998) *The Quiet Struggle: Information and Libraries for the People of Africa*. 2nd edn. London: Mansell.
- Sumner A and Tribe MA (2008) *International Development Studies: Theories and Methods in Research and Practice*. New Delhi, India: SAGE.
- Uhegbu AN and Okereke CI (2006) Decades of persistent ignorance towards sustainable dissemination of HIV/AIDS information among rural women in Imo State, Nigeria. *Library Review* 55(1): 35–44.
- Ukachi NB (2007) Information needs, sources and information seeking behaviour of rural women in Badagry, Lagos, Nigeria. *Information Trends* 4/5. Available at: <https://www.academia.edu/> (accessed 2 July 2017).
- Ukpong EA (1993) The constraints of NGOs' operational flaws on rural development initiatives in Nigeria. *Journal of Social Development in Africa* 8(1): 51–72.
- Umunna NO (2008) Agricultural information sources used by farmers in Imo State, Nigeria. *Information Development* 24(4): 289–295.
- Uzuegbu CP (2016) Effective information service delivery to rural dwellers in Sub-Saharan Africa: Whose job? *IFLA Journal* 42(1): 49–58.
- Williams D, Cooper K and Wavell C (2014) *Information Literacy in the Workplace: An Annotated Bibliography*. Aberdeen: Robert Gordon University. Available at: <http://www.researchinfonet.org/wp-content/uploads/2014/01/Workplace-IL-annotated-bibliography.pdf> (accessed 12 June 2017).
- Yates C, Partridge H and Bruce CS (2009) Learning wellness: How ageing Australians experience health information literacy. *Australian Library Journal* 58: 269–285.

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Appendix

Interview questions fielded to participants in the field experiment of the study: 'Impact of Tailor-made Information Literacy Provision on Rural Dwellers' Participation in Sustainable Development Targets in Nigeria: Implications for Public Library Services to Oral Societies'.

The main objective question

To what extent did rural dwellers who received information literacy provision vary in awareness, access to and utilisation of information pertaining to selected sustainable development practices as compared to those who did not receive provision?

Note: Apart from profile questions, other questions in this instrument require respondents to choose from a scale of four responses (weighted on 4, 3, 2 and 1). Some open-ended probe questions are built in to explore scale-wise responses in depth.

A. Profile of the respondents

1. What is your gender?(Male) (Female)
2. What is the name of your village?
.....
3. In which age bracket do you fall?

-
- Under 18
 - 18–20
 - 21–30
 - 31–40
 - 41–50
 - 51–60
 - 61–70
 - 71 +
-

B. General knowledge about sustainable development

1. Have you heard about the term 'sustainable development'?
 - 4 – Certainly yes
 - 3 – Somewhat yes
 - 2 – Not really sure
 - 1 – Never heard

2. If yes, from which source did you hear about the term 'sustainable development'?
.....
3. Sustainable development requires everyone on the globe to lead a lifestyle that is not harmful to people and the natural environment now and in the future. Do you agree?
 - 4 – I strongly agree
 - 3 – I slightly agree
 - 2 – I disagree
 - 1 – I don't know

C. On Nutritious Consumption (a target in SDG 2)

Awareness (perceived knowledge)

1. Tell me what you know about the following diseases?
 - i. Diabetes
 - ii. Hypertension
 - iii. Osteoporosis
2. Are you aware that diabetes, hypertension and osteoporosis diseases can be prevented through food habit or lifestyle?
 - 4 – Yes, I am extremely aware (i.e. concerning the three diseases)
 - 3 – Yes, I am moderately aware (i.e. concerning two out of the three diseases)
 - 2 – Yes, I am slightly aware (i.e. concerning one out of the three diseases)
 - 1 – No, I am not aware at all
3. If yes, which of the disease(s) in question and what is your source of information?
4. Are you aware of specific food habits or lifestyle necessary for preventing diabetes, hypertension and osteoporosis diseases?
 - 4 – I am extremely aware (i.e. concerning the three diseases)
 - 3 – I am moderately aware (i.e. concerning two out of the three diseases)
 - 2 – I am slightly aware (i.e. concerning one out of the three diseases)
 - 1 – I am not aware at all

Access (the evidence of knowledge)

5. Can you describe to me the food habits or lifestyle you know are necessary for preventing diabetes, hypertension and osteoporosis diseases?

- 4 –I can describe much about the food habits/lifestyle (covering the three diseases)
 - 3 –I can describe little about the food habits/lifestyle (covering one or two of the diseases)
 - 2 –I know some food habits/lifestyle but cannot describe them
 - 1 –I don't know about food habits/lifestyle let alone to describe
6. If yes, please describe as much as you can for each of the diseases?

Diabetes		Hypertension		Osteoporosis	
Food habits	Lifestyle	Food habits	Lifestyle	Food habits	Lifestyle

Utilisation (putting knowledge into practice)

7. Presently, are you adopting any food habit or lifestyle (whether mentioned above or not) aimed at preventing diabetes, hypertension, or osteoporosis diseases?
- 4 – Yes, always
 - 3 – Yes, sometimes
 - 2 – Yes, rarely
 - 1 – Never
8. If yes, how frequent?
- 4 – Daily
 - 3 – Weekly
 - 2 – Monthly
 - 1 – Can't be specific
9. Show me anything in your home now that proves that you are truly committed to preventing diabetes, hypertension, or osteoporosis diseases in your life or in your family? (Record the things seen/observed)
-

D. Desertification Activities (a target in SDG 15)

Awareness (perceived knowledge)

1. Regular felling of forest trees without planting new ones is NOT safe for the environment. Do you agree?
- 4 – Yes, I strongly agree
 - 3 – Yes, I agree

- 2 – No, disagree
 - 1 – I don't know
2. Why do you think so (in your answer above)?
3. What normally happens to metal and plastic wastes generated in your home?
- 4 – We always recycle/reuse/sell them/pour them into a special waste pit
 - 3 – Sometimes we recycle/reuse/sell them/pour them into a special waste pit
 - 2 – Sometimes we throw them away as part of general waste into the farm
 - 1 – We always throw them away as part of general waste into the farm
4. Why do you do so (in your answer above)?

Access (the evidence of knowledge)

5. To avert the challenges of indiscriminate felling of forest trees, and to properly dispose non-biodegradable wastes, can you recommend to me or to someone in future some vital steps and actions to be taken?
- 4 – Yes, I am very much able
 - 3 – Yes, I am somewhat able
 - 2 – No, because I am not able to describe or mention the actions I know
 - 1 – No, because I don't know let alone to recommend
6. If yes, please mention the things you know that can be done to prevent desertification?

Felling of forest trees:	Improper disposal of non-biodegradable waste:
--------------------------	---

Utilisation (putting knowledge into practice)

7. Presently, are you undertaking any exercise (whether mentioned above or not) aimed at averting desertification (felling trees, or improper disposal of non-biodegradables)?
- 4 – Yes, always
 - 3 – Yes, sometimes
 - 2 – Yes, rarely
 - 1 – Never

8. If yes, how frequently?
 - 4 – Daily
 - 3 – Weekly
 - 2 – Monthly
 - 1 – Can't be specific
 9. Show me any proof that you are truly committed to averting desertification (felling trees, or improper disposal of non-biodegradables) (Record the things seen/observed)
- 2 – No, because I cannot describe the address and criteria
 - 1 – No, because I don't know the address and criteria
7. If yes, please mention the address and describe any of the service criteria you know?

Legal Aid Council of Nigeria

E. On Access to Justice (a target in SDG 16)

Address:
Service criteria:

Awareness (perceived knowledge)

Utilisation (putting knowledge into practice)

1. Do you know any office in town where poor rural people can seek for legal services for free?
 - 4 – Certainly yes
 - 3 – Somewhat yes
 - 2 – Not really sure
 - 1 – Not aware
 2. If yes, mention the name of the office and its address?
 3. If yes also, how did you know about the office and their address?
 4. Do you know the criteria for getting free legal services available in town?
 - 4 – Certainly yes
 - 3 – Somewhat yes
 - 2 – Not really sure
 - 1 – I don't know
 5. If yes, please mention some of the criteria?
8. Have you ever benefitted from the free legal service scheme at any time?
 - 4 – Yes, several times
 - 3 – Yes, in few occasions
 - 2 – No, but I have told some friends about the scheme
 - 1 – No, because I am not interested, or not aware
 9. If yes, in what way did you benefit, and if you no, why?
 10. Have people benefitted from the free legal service scheme recently through you?
 - 4 – Yes, several times
 - 3 – Yes, in few occasions
 - 2 – I don't know, even though I have told some friends about the scheme
 - 1 – No, because I have not told anyone
 11. If you have any comment on why you have not benefitted (or people you guided did not benefit) from the free legal services scheme, please state?

Access (the evidence of knowledge)

6. Are you able to tell me or someone the exact address to visit, as well as the criteria for availing of the free legal services available in town?
 - 4 – Yes, I am very much able
 - 3 – Yes, I am somewhat able
12. Show me any proof that you have truly benefitted or assisted someone to benefit from the free legal services (Record the things seen/observed)



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Usage and impact metrics for Parliamentary libraries

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Abstract

Parliamentary libraries are important in supporting informed decision-making in democracies. Understanding Members' information needs is important, but the usage and impact of these libraries have been less explored. A particular example of the United Kingdom's House of Lords Library is studied, collecting and analysing data using techniques from the field of data science. These techniques are useful in extracting information from existing sources that may not have been designed for the purpose of data collection. A number of data sources available at the Lords Library are outlined and an example of how these data can be used to understand Library usage and impact is presented. Results suggest that Member usage varies significantly and that there is a small but significant relationship between usage and making speeches in the chamber. Further work should explore other indicators of impact, but these methods show promise in creating library metrics, particularly in Parliamentary settings.

Keywords

House of Lords Library, data science, impact, metrics, Parliamentary libraries, usage

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Introduction

Providing evidence of a library's usage and impact is an important process to inform policies on how to improve services and ensure that resources are appropriately allocated. Special libraries, including Parliamentary libraries, are not unique in this regard, but the population catered to and the services provided are in some ways, in particular in the need to provide information services. Parliamentary libraries in particular have the goal of providing full and unbiased information to Members in order to aid decision-making (Watt, 2010).

What the information needs of Parliamentary Members are exactly, and how these should be provided, are frequently changing and specific to the institutional context the library works within. Generalizing beyond the need for Parliamentary libraries to provide information to aid Members' decision-making is difficult. First, generalizing to a broader context can be difficult because the nature of who the Parliamentary library serves can vary between countries or governments (Brundin, 2005; Marcella et al., 1999). Second, the make-up of Parliamentary houses

can be diverse, where the Members come from myriad backgrounds, contexts, constituencies and preferences (Orton et al., 2000).

Further, the information needs of Members can differ across governments. An example is the early role of the Hungarian Parliamentary Library, which fostered the nascent democratic processes (Ronai and Bryant, 1992). The needs described in that particular research will be different in more developed democracies, including modern Hungary (e.g. Kohl, 1991). Changes in technology have also changed the nature of information available to Parliament, both internal and external to the Parliamentary library (Missingham, 2011; Missingham and Miskin, 2011; Watt, 2010). However, the use of technology and existing data sources has been more limited in Parliaments of other countries such as Ghana (Alemna and Shouby, 2000), South Africa (Mostert, 2005), India (Zafar,

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2009) and Tanzania (Manda and Hilika, 2016). Given the rapid change in adoption of technology and changes in the needs and contexts of Parliamentary Members, use of these additional sources of information may have already changed dramatically.

While studies have focused on the needs of Parliamentary Members and the role of Parliamentary libraries in providing information in response to these needs, significantly less research has focused on actual library usage and the impact these libraries have, generally and specifically among Members. The present study explores the usage and impact of the United Kingdom's House of Lords Library, particularly among the Members, and provides examples of how these metrics can be developed and used. The exploration of the Lords Library is unique as the chamber it serves, the House of Lords, has a particular role in governance. Further, previous research on UK Parliamentary libraries has focused on the role of the House of Commons Library (e.g. Comma Serema, 1999; Orton et al., 2000). Current data collected is described and additional sources are identified, and 'Big Data' techniques are employed to extract and analyse data collected, as the data available were not generated for analytic purposes, and are largely unstructured in this sense (Gandomi and Haider, 2015). Results suggest possible avenues of data collection to understand usage of Parliamentary (and potentially other) libraries, and how these data can be used to understand the potential impact these libraries have on governance.

The House of Lords Library

The House of Lords is seen as a 'historical curiosity' (Russell, 2010: 866), although it still has an important role in UK governance (Norton, 2003; Russell, 2010; Russell and Sciara, 2007). The number of Members of the House of Lords is not fixed; new Members are added periodically through nomination by the public and political parties. The Prime Minister must approve nominations, after which appointments are formalized by the monarch. Most appointments are made for life (Life Peers), although these by definition are not hereditary. There are still a small number of Hereditary Peers. The House of Lords Act of 1999 reduced the number of Hereditary Peers by more than 600, setting the maximum number to 92. The remainder of Members are clergy (Bishops). Currently there are 791 Members of the House of Lords: 676 Life Peers, 90 Hereditary Peers, and 25 Bishops. In comparison, there are a set number of 650 Members of Parliament in the House of Commons, although future

legislation aims to reduce this number to 600 MPs (Johnston, 2017).

Bills passed by the House of Commons need the assent of the Lords, although this power has been limited and can in some instances be overridden by the Commons, through the Parliament Acts of 1911 and 1949. The 1911 Act removed the Lords' absolute veto power on money bills, while replacing it with powers of delay, with the 1949 Act extending similar rules to all other public bills (Shell, 2007). Like many other second chambers, it works extensively on legislative revision, making numerous amendments to bills which are largely accepted by the House of Commons (Norton, 2003). The House of Lords also provides administrative oversight, and can debate issues the House of Commons does not have time to do, having a limited role in setting the legislative agenda.

Given this role, Members of the House of Lords need information relevant to the numerous bills and duties they are presented with by the House of Commons and issues facing the nation. As such, the House of Lords Library provides important information services to Members, just as the House of Commons Library does for Members of Parliament (MPs).

The Lords Library was established in 1826, with limited services provided. In 1977, a working group was formed to modernize services, which are the basis of the services provided to Members today (Greenhead, 2014; Purvis, 2017). These modernizations included staff appointed to provide in-depth research for the Members, and recruitment of professional librarians to look after reader and technical services (Greenhead, 2014). In addition to library services such books, journals and special collections, the Lords Library also provides planned or bespoke research services (Purvis, 2017). Planned outputs focus on important upcoming debates or topics in the news, and are released as reports and materials under the titles of Lords Library Note, Lords in Focus, or Lords Briefing Packs (although Lords in Focus is becoming subsumed into the Lords Library Note title going forward). The Library also produces the Current Affairs Digest, a monthly digest of articles from the Library's academic journal subscriptions, from blogs and magazines, plus speeches and think tanks. All of these materials are electronically available online and sent to individuals by request, with all Members signing up to speak in debates sent research materials relevant to that particular speech. Paper copies are also left in open reading spaces throughout the Library.

While no direct research on the information needs of Lords was identified, it can be reasonably assumed that in many ways these needs are similar to those of

MPs, given the same legislation, administrative issues and issues facing the nation. The information needs of MPs, and hence the pressures on Library services, are complex and multifaceted (Comma Serema, 1999; Orton et al., 2000). It has been noted (Comma Serema, 1999: 187) these ‘needs can vary depending on what is happening nationally, internationally, and what is going on in Parliament’. Case studies and surveys both show the importance of the Commons Library in providing information to MPs in a variety of ways (e.g. background for informed voting, research for speechwriting, constituency casework, Parliamentary business) (Comma Serema, 1999; Orton et al., 2000). The limited amount of data available also suggests that Members of the House of Lords have varied information needs and make use of the services of the Lords Library. In 2016, 734 Members used the Library for at least one service, including the Library answering more than 3000 enquires, providing nearly 1700 bespoke research requests, and loaning 1457 books (Purvis, 2017). Additionally, the Lords Library added nearly 1700 new titles to its catalogue in 2016 (Purvis, 2017).

While Members clearly have particular information needs, which are likely to be similar to those in the House of Commons, several notable differences apply to the Lords Library compared to the Commons Library. First, the role of the House of Lords itself is different from the House of Commons in terms of governance, as noted above. The House of Lords devotes significant time to revising legislation proposed in the Commons, administrative oversight and debate, while its assent is required to bills passed by the Commons (Norton, 2003; Russell, 2010). Second, Members do not have a constituency per se, and do not have electoral pressures. As such, there is less pressure to adhere to party cohesion (although Members frequently do) (Norton, 2003). The Lords Library is also smaller in size and has fewer staff than the Commons Library, even though there are more Members of the House of Lords than of the House of Commons. As such, the 45 staff members of the Lords Library are generalists who must produce work on a broad array of topics, while there are a number of topic specialists in the Commons Library.

In order to better provide services to Members, the Lords Library began a project to better develop metrics for usage and impact of its services. Given the extent of resources, both in terms of person-hours and finance, the Library sought to exploit existing data to develop these metrics. There is limited research on how to collect these metrics using existing data in libraries generally, with little work specifically conducted in Parliamentary libraries. As such, the

following section outlines work done to bridge this gap, particularly in Parliamentary libraries, using the project undertaken at the House of Lords Library as a demonstration.

Parliamentary library metrics using data science

There is an array of literature outlining the myriad methods to measure and evaluate libraries generally, including quantitative, qualitative or mixed-method approaches. These can evaluate the library holistically or only certain aspects of performance. These methods have been covered extensively (e.g. Appleton, 2017; Poll and Payne, 2006), and the focus here will be on research on special libraries, in particular Parliamentary libraries. These libraries have unique pressures and the impacts are different from other contexts. For example, academic libraries may be interested in measurables such as student outcomes (like exam grades) or staff outcomes (such as publications and H-indices) (Showers and Stone, 2014). Parliamentary libraries provide additional services, such as research on specific topics, and the outcomes are more difficult to measure. In particular, the overall goal is to aid informed governance, and how this is best indicated is not directly obvious.

Other indicators have therefore been suggested. In the UK House of Commons, Comma Serema (1999) noted the use of a complaints system and the potential for regular user surveys to indicate Library performance. A form of survey, the Contingent Valuation Method (CVM), has also been suggested for special libraries generally (Chung, 2007; Missingham, 2005). However, CVM and surveys generally can be costly and time consuming (Missingham, 2005). Surveys and complaint systems also can miss important information from those Members not participating. These self-reporting mechanisms are also somewhat limited by memory and perceptions of use and impact.

These types of data collection also do not take advantage of records, information and data already collected in a variety of forms as part of everyday library processes. Frequently these records and data are not generated for research or analytic purposes, so the methods such as those used in field of ‘Big Data’ need to be applied to turn these into meaningful metrics. These existing data are not affected by memory or perceptions (although can be affected by other problems), and given these are already being collected for other purposes, the additional cost is low.

To explore the possibilities of creating and using such measures, the House of Lords Library, through the UK Parliamentary Office of Science and

Technology (POST), set up a project for a researcher at an academic institution (the author) to undertake as a Parliamentary Academic Fellow. The goals of the project, as outlined in the call for applications, were:

To ensure that the research services that the Library provides are both appropriate and effective, the Library collects a number of different types of data on the services it provides and more limited data on how these services are being used by its customers. The aim of this Project is to assess the appropriateness and usefulness of the data being collected by the Lords Library to monitor and evaluate its performance, effectiveness and impact. It is envisaged that this will involve:

- Establishing what data is currently collected, by whom and for what purpose.
- Identifying the types of information and data that would be useful for the Library to collect, and the methods that might be used for such purposes, in order for it to be able to systematically and rigorously assess its performance, effectiveness and impact.
- Using examples of current or best practice from elsewhere, identifying whether there are accessible, free or low-cost IT solutions available, in particular for analyzing the data quickly and easily.

A variety of avenues were followed to create and analyse data. Some of these were informed by discussion with Library staff, while others have been independently generated. The goal of the data creation was to identify the usage of Library services (quantity) and the impact these services have, particularly among Members (quality). All of the work was conducted in R, a freely-available programming and statistical computer program. The R program has a large number of developed packages that allow for extraction and manipulation of complex data as well as powerful statistical analyses (R Core Team, 2018). The following list describes major sources of data and how these were extracted and manipulated in order to create usable metrics.

Lords Whips site for speaker list

To speak during a scheduled debate, Members sign up via the Lords Whips website (www.lordswhips.org.uk). Members who sign-up are recorded on a daily basis by Library staff and sent the relevant research materials for a given debate (i.e. Research Notes, Lords in Focus, or Lords Briefing Packs). Besides direct individual requests, this sending to speech sign-ups is the only systematic measure of usage (at least receipt) of these materials. Downloads from the

Internet cannot be linked directly to an individual (although this still can produce useful information as discussed below in Google Analytics), while counts of remaining paper copies tell only how many were taken, not by whom or if some copies were read and returned. Therefore, counts of sign-ups are a basic metric of usage.

Originally, these counts were done manually. A person would visit the Whips site each day recording the signed-up speakers and the debate and date for the speech. This process has been automated using R, using the package XML where the program scrapes the page the website each time it is run. The program outputs a list of unique entries for speaker/debate/date combinations. This program can be automatically scheduled to run at any given interval, using the package `taskscheduleR`. The inputs to the program (specifically start of week dates) can be set to run indefinitely, as long as the website does not change the underlying HTML/XML code in a significant way. It is likely that it will change at some point, at which point the program would need to be adjusted accordingly.

EDDIS request system

The Lords Library has used the customized Enquiries Database Department of Information Services (EDDIS) system to log all requests made, including any research queries. A new customized system Library Enquiries Tracking System (LETS) has been developed for the Library to capture requests going forward, but the important data captured is similar in nature. The system provides data outputted in easily used comma-separated values (CSV) files. The reports provide a number of variables that can be summarized in a useful manner. Importantly, the measures include the number of enquiries made by each Member, the channel to make these requests (e.g. at the Library desk, email) overall and by each Member, and the types of enquiries made (e.g. research enquiry, printing, press search) overall and by each Member. As such, the analysis of requests as an outcome on its own is rather straightforward; however, potentially more can be understood about usage and impact if this request system data is linked to other (and new) data sources.

Symphony library records

Previously, the Library used the SisriDynix Symphony integrated library system to log book and other Library material loans (SisriDynix, 2018). The version of the system used generated reports of current

loans, including by user, but it did not produce reports of historical loan data. This limited understanding of how Library holdings were being used. Symphony does contain records of all old loan records in its system (unless explicitly purged) creating a log of these in text format. The log is not structured in a way to be immediately usable for analysis of any sort. An example entry in this log is as follows:

327.41 BEN copy:1 005240

Six moments of crisis: inside British foreign policy/ Gill Bennett.

Bennett, Gill.

Jones (on behalf of XYZ 3/3/2016,12:32 28/4/2016,23:59

12/4/2016,11:13 0 0 0

The first line of text includes information call number (and which copy, for cases where there is more than one copy); the second line includes book title and author; the third line repeats author information; the fourth line includes user ID making the loan (e.g. XYZ), date/time of checkout and due date; the fourth line includes date returned, and counts of renewals, overdue notices and recalls. With more than 10,000 such records, manual counting of this type of information is not feasible. However, there is a structure to the records. This structure was leveraged to parse the text in R and turn these records into flat records (one row per record), with columns for each piece of information noted across the rows of the record. This provided the possibility to extract a number of potentially useful measures, including usage by the Members directly. These include:

Loans and length, by user or book. Number of loans can now easily be counted, overall, by book or by user ID. An additional database linked user IDs to names and status within the House of Lords (e.g. staff, Member). Additionally, information about when loans were made, how long each loan was made, and the overall number of days books were loaned can be made by book or by user. Important to the current work, this user can be identified at the Member-level, and can be linked to other Member-level data.

Count loans by book type by user. The call number can also be extracted, such that these can be linked to the categorizations of the Dewey Decimal system. While any level of discrimination of the call number could be made (e.g. by units, tens or hundreds) using this method, the current work classified books at the broadest level, i.e. by the hundreds classification. Now counts of what kinds of topics/books can be made overall and by individual users. These data are also recorded at the Member-level.

Link NBARN data to loans. Using the above information, data from the loan record was linked to information about new library holdings, disseminated by the New Books and Resources Newsletter (NBARN), to identify if new holdings are being loaned following this dissemination. As an initial example, a list of books included in the NBARN for November 2017 was provided, and these books were linked to the loan record by call numbers. This allows for counts of number of loans of each new resource or what has not been used, and by which users. This work can be extended to all editions of the NBARN as desired.

The Lords Library recently switched its library system from Symphony to Koha, an open-source integrated library system, which contains a reporting system that more easily generates these types of information (LibLime Koha, 2018). The more readily outputted data from this reporting system will make these kinds of analyses more direct in the future.

Google Analytics raw data

The UK Parliament uses Google Analytics to track usage of the Parliamentary website, which collects data along a number of possible metrics and domains (see <https://developers.google.com/analytics/devguides/reporting/core/dimsmets> for information on metrics and domains).

While these data are available through the Google Analytics dashboard, analyses can be somewhat difficult given the lack of raw data and tools to analyse these in customized ways. The R package `googleAnalyticsR` allows for importing raw data in a customized manner into R, allowing for additional analyses. This was done by extracting information about the web pages hosting Lords Library Notes, Lords in Focus and Lords Briefing Packs. These could be separated given the systematic structure of the web pages hosting each of these pieces (i.e. Lords Library Notes have `lln-` in the url, Lords in Focus, has `lif-` in the url, and Lords Briefing Packs have `lbp-` in the url). Information about these pages could be extracted in regards to the metrics and domains of interest. The initial set of information collected includes:

Count web hits for Library research output. Given the raw data, the number of site hits for each research output can be identified, both as total hits and unique visitors. Interestingly, the most visited page for research for 2017 was a 2015 piece, 'Impact of Pornography on Society' (<http://researchbriefings.parliament.uk/ResearchBriefing/Summary/LLN-2015-0041>)

Count web hits by location and domain. As a step further, it can be identified where these research outputs are being accessed, through the internet domain used and geographic location recorded. This is useful in identifying internal Parliamentary usage (domains of parliament.uk) and external usage (including global reach). There is some limitation to this, as Parliamentarians and staff may access the site from external servers, as well as using VPNs or other methods to obscure IP addresses and location. However, it does provide a good picture of usage.

Link counts to author, other briefing data. Additional information from internal Library data about the research outputs have also been linked to website usage data. These additional data include author(s) of each output, title, date of publication and summary. This provides more detailed records of outcomes, as well as allowing for different analyses. For example, the number of page hits by author(s) can show which pieces by which author or topics have the greatest usage/reach.

Hansard

The Hansard system provides a verbatim record of Member speeches made in Parliament, with searches available on the UK Hansard website (hansard.parliament.uk) or the Parliamentary search website (search-material.parliament.uk). The new Parliamentary Search tools allow for significantly easier to use data. In particular, the data is output in CSV format with a number of variables, including speaker, date, debate and text. The number of speeches a Member makes overall may be useful to explore the potential impact of the Library and other information sources. If there is a relationship between activity (speeches in this case) and Library usage, this could suggest the nature of information used by the Members in chamber.

A further potential indicator of the Library's impact is Members referencing it in a public way. Hansard provides one such source of data. If the Library is mentioned during a speech in the House of Lords, this would indicate some impact. A number of terms were included in the initial searches for mentions in the Hansard system since 2010. These terms were Lords Library, Library Note, Library research and Vollmer, the current head librarian. The last is an example of where specific and unique terms may identify mentions – for this example, three mentions were made since 2010. For the following initial analyses, only counts of total speeches were used, to identify the relationship between Library usage and chamber participation.

Sentiment analysis of speeches. After collection of the relevant speeches, the text can be analysed using sentiment analysis, creating quantifiable information. Sentiment analysis techniques readily available in R were used to create this data, using the tidytext package and the Afinn and Bing sentiment lexicons (Silge and Robinson, 2017). These data and analysis explore whether the overall tone of the speech is positive or negative. While the data do not directly measure whether the Library is being mentioned positively or negatively, they do give a picture of the context in which the Library is mentioned. Further, analyses can be conducted overall (across all mentions/speeches), by individual speakers, and/or by individual debates. It is important to at least control for the latter, as it may be expected some debate topics may be laden with more negative terms while others use many more positive terms.

In addition to this sentiment analysis, other techniques such as n-gram correlations and topic modelling can also be conducted on these texts. N-grams are the number of words in a phrase (e.g. 2 words are a bigram, 3 words a trigram, etc.). This analysis focuses more specifically on the terms of interest (Lords Library), to identify if these are being mentioned frequently with other specific terms. Topic models are another statistical method in text mining to discover the hidden semantic structures in a given text. This method can also be used as a next step to identify if certain topics are arising in speeches using the key terms regarding the Library. These analyses can potentially further understanding of when the Library's service influences debate.

News and social media mentions of the library

Besides speeches in the House of Lords, Members and others can also reference the Library through other means. Such mentions may come through press coverage or through social media use. As such, searches for similar terms were done of both news sources and social media, in a limited manner.

News. To identify mentions in the news, a Google Alert was set up to identify stories that include at least one of the following terms: 'House of Lords Library', 'Lords Library', Lords Library briefing, Lords Library note and Lords Library research. A small number of pieces, six in total, were identified. Three of these mentions are positive mentions in opinion pieces written by Members in news outlets, while the others are news pieces citing Library research. Other news sources, such as LexisNexis, may be a more thorough way to identify such mentions, but are not

directly available without cost. Given the relatively small number, these pieces can be used as exemplars of impact, as well as being easily hand coded into a larger database of Member and general usage.

Twitter. Another source where the Library's services may be mentioned is on social media. Currently, only Twitter is being explored, largely due to the platform's accessibility for such searching. Using the *twitteR* package in R, the following terms were used to search Twitter and scrape data about relevant tweets: '@UKHouseofLords library', 'Lords library', 'Lords library', '@UKHouseofLords Library', 'HOL library'.

Data scraped from Twitter include the text of the tweet, the user ID, whether it is a retweet, how many times it has been retweeted, and how many times the tweet has been favourited. Again, the number of identified relevant instances is small, currently 41 cases. Text analytics techniques, described above, can also be used on these tweets, which is a possible further step. Additionally, to the extent that user IDs can be linked to Members, these data can be integrated into the larger database of usage. While none were identified as being done by a Member, it is still indicative of potential impact the Library has generally.

Sentiment analysis of research outputs

Based on the sentiment analysis presented on Hansard speech text, it was requested to similarly analyse several of the written research outputs, with 16 initially being used. The goal was to identify whether the reports were using an overly positive or negative tone in the writing. The results can be explored overall or by report, allowing for control of the topic being covered. Generally, results suggested that reports were not overly positive or negative. The mean difference between positive and negative scores using the Bing lexicon was 26.1, a relatively small positive score. As a next step, the reports could be stripped of quoted text, to explore only original writing by Library researchers. By doing so, the data can also be linked to individual authors to identify writing patterns, if topics are controlled.

Combination of various data sources

While some analyses have been conducted on individual data sources, such as the EDDIS data, the combination of these myriad data sources allows for much richer analyses and understanding. For example, linking when a Library Note has been sent to a Member to data from Hansard can show the potential direct relationship sending these notes have. Other questions

that could be explored include: are Members who make more requests also the ones signing up for more speeches, and are they making more mentions in chamber? Are those taking Library loans also making more requests, or making more mentions, and if so, what is the sentiment of these mentions? These are a small number of contrived examples, but hopefully the point of possibilities is made.

In order to show the potential of doing this, a data set was created for the fiscal year 1 June 2017 – 31 March 2018 (when the Easter break began). In particular, to analyse the impact on Members, only Member-level data were used to create this combined data set. Therefore, data such as from Google Analytics, while informative and useful, could not be used in this particular example. Similarly, press and Twitter mentions, while useful exemplars, are too few to include in quantitative analysis and are excluded. Rather, EDDIS data, number of sign-ups on the Whips page, library loan data, and speeches found in Hansard are combined at the Member-level.

Some difficulties arose when creating this data set. The most common and problematic issue is inconsistency across data sources in recording identifiers, or the 'key', which are needed to match-link across data sets. For example, Member names can be listed as Lord Smith, Smith L, Smith, L., or L Smith. All of these need to first be made consistent, including the use of punctuation marks such as commas and full stops or the program will not match records. A particular difficulty was linking the Koha data, which did not have a formal title, like other databases, only the individual's full name. This needed to be used as a key to link to another data set also containing this information and the formal name, which could then be linked to other data using the formal name. This led to some slippage in linkage, and hand correction was needed to link Koha data to other data for 28 cases. Another 17 cases were duplicated in the final data set due to minor differences in the linkage key, and these were merged into one case each. There are other inconsistencies in the various data sets, such as the recording of date/time. While these problems increase difficulty and introduce greater potential for linking errors, a data set was successfully created, and the following analyses show the potential usefulness of these created data to understand the Library's usage and impact.

Analyses of member-level data

Table 1 shows the means, standard deviations, and minimum and maximum value in the fiscal year 2017–2018 for the number of speeches made overall,

Table 1. Mean member usage of library and speeches FY2017–2018.

	Mean	Std. Dev.	Minimum	Maximum
000 series loans	0.005	0.088	0	2
100 series loans	0.014	0.179	0	4
200 series loans	0.014	0.192	0	4
300 series loans	0.260	1.051	0	12
400 series loans	0	0	0	0
500 series loans	0.004	0.107	0	3
600 series loans	0.009	0.094	0	1
700 series loans	0	0	0	0
800 series loans	0.006	0.095	0	2
900 series loans	0.271	1.011	0	15
No call number loans	0.391	1.765	0	20
Total book loans	0.971	3.393	0	49
Days/checkout	49.894	43.070	0	237
Research Requests	6.438	13.023	0	143
Speeches overall	17.238	35.813	0	338

Table 2. Correlation matrix between usage and speeches.

	Total book loans	Days/checkout	Research requests
Days/checkout	0.030	–	–
Research requests	0.460	-0.007	–
Speeches overall	0.008	-0.098	0.061

the number of book loans by call number 100 series, book loans overall, the average number of days each book loan was made by individuals and the number of research requests. For each except mean days per loan the number of cases equals 780; days loaned is limited to those actually making at least one loan and the number of cases is 186.

First, it is clear that a number of Members do not utilize the Library, according to these metrics. All of the minimum values are zero for each indicator, and the mean for book loans is generally low, with an overall mean of book loans within the year of slightly less than one per Member (with a median of 0). No books in the 400 series (language) and 700 series (arts and recreation) were checked out, which may be because these are less related to issues of governance. Conversely, 900 series (history and geography) and holdings with no call numbers (such as journals or special collections) had the highest mean when total loans are broken down by type; these may have the higher relation to governance during this term.

Second, it is equally clear there is a large variation in Library usage among the Members. In most cases, the standard deviation is several times larger than the mean, while some of the indicators have quite large ranges. For example, while the mean number of

research requests is more than six, the standard deviation (13.0) and range (0–143) indicate that some Members made high use of the Library research services, while others made no requests at all. Similarly, some Members were highly participatory in the chamber in terms of speeches, while others never spoke during the fiscal year.

To initially show how these usage measures are related and how usage may be related to participation, a correlation matrix is presented in Table 2. To simplify presentation, and given the relatively small means within each hundred series, only total checkouts are used, as are mean days of checkout, number of research requests and how many speeches were made in fiscal year 2017–2018.

Generally, the correlations are quite low, with one exception. The number of research requests are significantly correlated with book loans, with $r = 0.46$ ($p < 0.001$). Particularly in relation to the other small correlation coefficients, this relationship suggests that Members are generally Library users, taking advantage of all its services, or conversely, less likely to use any services. However, the correlation still shows there is a reasonable amount of variation, such that there are some Members using one service which does not directly correspond to their usage of the other service.

Interestingly, the only other marginal statistically significant correlation is between the number of research requests and number of speeches made ($p < 0.10$). The correlation is small, $r = 0.06$, but is positive, suggesting a small but existent relationship, where more requests for research in the Library is related to more speeches given in chamber.

Conclusions

Parliamentary libraries seek to serve Members in a number of ways to assist in informed governance. However, the route that these libraries have on governance is not always clear. The outcomes of Parliamentary library usage and impact have been less studied, partly due to the unavailability of data measuring these outcomes. Methods such as contingent-valuation or satisfaction surveys require additional data collection, and can be costly. An alternative is to develop potential measures of usage and impact based on currently existing data which are being created for a variety of purposes within the library. These data can be extracted and converted into meaningful metrics using 'Big Data'-type methods using freely available software.

The current research explores the use of existing library data to create measures of usage and impact through the example of the UK's House of Lords Library. To date, little work has explored this particular institution, which has a unique role in governance. The House of Lords Library serves its Members in their advisory role to the more powerful House of Commons. The Lords Library is smaller in size than its counterpart, the House of Commons Library, although it serves more Members. Given its size, the Lords Library provides library services including both planned and bespoke research with a staff of generalists, able to answer the myriad questions that may arise in governance.

In conducting these library services, data are being generated as by-products which may be informative to the usage and impact of the Lords Library. A variety of data sources were explored, which may similarly be available in other Parliamentary settings. This variety of data sources was then linked to show an example of the types of analyses that could be conducted to understand library outcomes. There are issues in linking these data sources, but once these are linked, analyses show these data can improve understanding of how libraries, in particular those in Parliaments, are used. Other statistical analyses of such data may also inform greater understanding useful for informing future library policies.

Important in ensuring the usefulness of such data is the capture of data, which should be done in a systematic manner. The more specific the details included the better the possibility for data linkage and analyses. Systematic efforts such as a short follow-up survey sent at the completion of a Member request that is being implemented at the Lords Library provide a potentially useful source that can be linked to other data at the individual-level. However, it is worth noting that if the survey is only distributed to those making a request, it suggests querying only those that believe in the usefulness of Library services. Those never making a request by definition are never asked to take this survey, and so no insight can be made from this about why they do not use the Library. Further study comparing users and non-users to identify whether certain characteristics (e.g. length of membership, attendance) relate to usage or not would add to understanding. An alternative would be to interview all Members to identify their understanding of Library services and the usefulness of these, as well as reasons why they may not utilize these services. Regardless, there are myriad data sources which can be collected and used currently by the Library. However, to collect these data require some investment through person-hours. For collection of many of these sources, programs such as R can extract useful indicators. Documentation and message boards for this (and similar) programs are extensive online, so it is largely a matter of human resource allocation.

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References

- Alemna AA and Shouby KE (2000) An investigation into the information needs and information-seeking behaviour of members of Ghana's legislature. *Library Management* 21(5): 235–240.

- Appleton L (2017) *Libraries and Key Performance Indicators: A Framework for Practitioners*. Kidlington, UK: Chandos.
- Brundin M (2005) Democracy building activities in the Swedish Riksdag: The role of a parliamentary library. *IFLA Journal* 31(1): 19–27.
- Comma Serema B (1999) Matching MPs' information needs and information services in the House of Commons. *Library Management* 20(3): 179–190.
- Chung H-K (2007) Measuring the economic value of special libraries. *The Bottom Line* 20(1): 30–44.
- Gandomi A and Haider M (2015) Beyond the hype: Big data concepts methods and analytics. *International Journal of Information Management* 35(2): 137–144.
- Greenhead J (2014) History of the House of Lords Library. UK House of Lords Library Lords Library Note 2014/041, 3 December. Available at: <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/LLN-2014-041> (accessed 27 July 2018).
- Johnston N (2017) *The Parliamentary Constituencies (Amendment) Bill 2017–19*. House of Commons Briefing Paper Number CBP 08164 1 December.
- Kohl E (1991) The challenge of change in Eastern Europe to the Parliamentary Libraries of the West. *IFLA Journal* 17(2): 128–134.
- LibLime Koha (2018) LibLime Koha ILS. Available at: www.koha.com (accessed 3 October 2018).
- Manda PA and Hilika AR (2016) Internet access and use in political discourse by the Members of Parliament in Tanzania. *University of Dar es Salaam Library Journal* 11(2): 31–44.
- Marcella R, Carcary I and Baxter G (1999) The information needs of United Kingdom Members of the European Parliament (MEPs). *Library Management* 20(3): 168–178.
- Missingham R (2005) Libraries and economic value: A review of recent studies. *Performance Measurement and Metrics* 6(3): 142–158.
- Missingham R (2011) Parliamentary library and research services in the 21st century: A Delphi study. *IFLA Journal* 35(1): 52–61.
- Missingham R and Miskin S (2011) An informed Parliament: The role of the Federal Parliamentary Library. *Australian Journal of Political Science* 46(2): 331–339.
- Mostert JB (2005) Parliamentary information sources systems and services in South Africa. *South African Journal of Libraries and Information Science* 71(1): 51–63.
- Norton P (2003) Cohesion without discipline: Party voting in the House of Lords. *Journal of Legislative Studies* 9(4): 57–72.
- Orton R, Marcella R and Baxter G (2000) An observational study of the information seeking behaviour of members of Parliament in the United Kingdom. *ASLIB Proceedings* 52(6): 207–217.
- Poll R and Payne P (2006) Impact measures for libraries and information services. *Library Hi Tech* 24(4): 547–562.
- Purvis M (2017) Behind the scenes at the House of Lords Library. Available at: <https://parliamentsandlegislatures.wordpress.com/2017/03/22/house-of-lords-library> (accessed 27 July 2018).
- R Core Team (2018) R: A Language and Environment for Statistical Computing. Available at: <https://www.R-project.org> (accessed 27 July 2018).
- Ronai I and Bryant MN (1992) The role of Hungary's Parliamentary Library in fostering democratic decision making. *Libri* 42(2): 136–143.
- Russell M (2010) A stronger second chamber? Assessing the impact of House of Lords reform in 1999 and the lessons for bicameralism. *Political Studies* 58(5): 866–885.
- Russell M and Sciara M (2007) Why does the Government get defeated in the House of Lords? The Lords, the party system and British politics. *British Politics* 2(3): 299–322.
- Shell D (2007) *The House of Lords*. Manchester: University of Manchester Press
- Silge J and Robinson D (2017) *Text Mining with R: A Tidy Approach*. Sebastopol, CA: O'Reilly Media Inc.
- SirsiDynix (2018) SirsiDynix Symphony. Available at: <http://www.sirsidynix.com/products/sirsidynix-symphony> (accessed 3 October 2018).
- Showers B and Stone G (2014) Safety in numbers: Developing a shared analytics service for academic libraries. *Performance Measurement and Metrics* 15(1/2): 13–22.
- Watt I (2010) Changing visions of parliamentary libraries: From the Enlightenment to Facebook. *IFLA Journal* 36(1): 47–60.
- Zafar MS (2009) *Information seeking behaviour of members of Legislative Assembly of UP and Rajasthan: A comparative study*. Unpublished Doctoral Thesis, Department of Library and Information Science, Aligarh Muslim University, India.

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Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession

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Abstract

Professional identities provide a lens through which to understand ourselves and our professional community. Individual practitioners may find that shifts in their own professional identities lead them to redefine their profession and those moving into new types of roles or engaging in new tasks may strive to alter the direction of the profession at large. This paper's first objective is to provide insights into how professional identity development occurs and how the emergence of a new or unusual take on the library and information science profession based on professional experiences working in non-traditional roles can be seen as both an opportunity and a threat to the library and information science profession, using the experience of library and information science graduates working in non-library roles as a lens. The second objective is to translate the experiences of library and information science graduates working in non-traditional roles into recommendations for promoting diversity in the definition of the profession.

Keywords

Libraries and society/culture, library and information science as a discipline, library and information science as a profession, principles of library and information science

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Introduction

The idea that the library and information science (LIS) profession is in the midst of a period of major transition and challenge has been presented in numerous research and practitioner contexts. Several factors have contributed to this transformation in terms of both the types of work that librarians do and how they do it. The first of these is the emergence of a range of information technologies that allow for dramatic increases in the amount of information available to the average citizen (American Library Association, 2014). The changes in technology are leading to shifting perceptions of how librarians should work and the role that libraries should play within society at large or within the context of other organizations such as governments or universities (Kennan et al., 2006).

Dorner et al. (2017) published an article in the *International Federation of Library Associations and Institutions (IFLA) Journal* entitled "Making sense of the future of libraries" outlining five major projects

undertaken in different countries around the world involved in responding to serious challenges to librarianship and the responses that libraries and librarians should make in response to them. They argued that challenges to the profession are forcing librarians and library associations to engage in individual and collective sensemaking processes and that the development of a new shared sense of the librarianship profession plays a role in the success of library advocacy:

This may be envisioned as a feedback loop (or iterative process): assuming library professionals lack cohesive identity, this leads to a tenuous shared context and an unstable or nonexistent platform for advocacy. From this point, it then leads to a barrier in defining and

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expressing value to stakeholders, which in turn then leads potential funders to undervalue, or not see value in librarianship's [unexpressed] practice(s) (Figure 1). When sensemaking is coherent and successful in restoring a collective identity, this strengthens and establishes a shared context from which to build an agenda for advocacy. (Dorner et al., 2017: 331)

Changes to a profession, prompted by opportunities or threats from the external environment, will necessitate changes to the professional identities of members of the profession. Although professional identities are all individually constructed and are unique because they incorporate aspects of a person's experiences, attitudes and aspirations, there are some members of a profession whose professional experiences have the potential to lead them to be outliers within their professional community. These are professionals who are engaged in tasks or roles that are emerging, uncommon, unusual or non-traditional.

The professional identity experiences of LIS graduates in non-library roles are explored in this study. This population was selected because they represent a group of LIS professionals whose experiences have not been closely examined, but whose professional roles and experiences may be of vital interest in understanding future directions and opportunities for the LIS profession. These roles may represent emerging opportunities for LIS graduates, but from a professional identity perspective they show the edge of the profession. Their roles and experiences are not traditional and may not be considered "typical" for LIS graduates. These roles challenge views of how librarianship is practiced and may have impacts on LIS education, professional association work and professional advocacy.

The objective of this paper was to understand the professional identity experiences of LIS graduates in non-library roles to determine which aspects of their experiences allowed them to successfully compete for and thrive in non-library roles as well as to identify any barriers that could potentially be blocking the entry of LIS graduates in information-related roles outside of library settings. Of particular interest was how their experience in non-library roles had shaped their perception of the LIS profession and how their perceptions of the profession were impacting their relationships with LIS professionals in library roles. Four of the main themes that emerged from their discussions of professional identity experiences were that: (1) the LIS profession is perceived as undergoing a period of transition and definitions of the profession as well as its practice are evolving; (2) professional identities are dynamic and can shift dramatically over

the course of one's career; (3) professional identities are strongly influenced by interactions with others; and (4) differing perceptions of the definition and practice of librarianship as a profession are leading to conflict within the profession. Taken together, these themes reveal the potential for LIS graduates who are redefining the LIS profession through their professional practices inside or outside of libraries to become estranged from the profession if conditions are not available for redefining or expanding the professional definitions of librarianship in response to evolving roles, practices and knowledge sets. A set of recommendations, which may be particularly relevant to LIS educators and associations, have been developed based on these themes, with the objective of promoting diversity in the definition of the LIS profession.

Literature review

Three bodies of research literature are explored in this review. The first of these is research on professional identity. The second is research on professions. Both of these bodies of literature are concerned with how individuals and/or groups define themselves and their roles within society. These definitions impact the functions which they select and are permitted to perform, the groups with whom they identify and associate, and the power or status that they are able to command within society. The third body of literature explored was research on LIS professional identities and socialization into the LIS profession. This literature applies the concepts present in the larger professional identity research to the LIS context, most particularly to librarians employed in public and academic libraries.

Professional identity research

A professional identity is a particular type of identity that is focused on an individual's sense of self in relation to their occupation, work or professional life, i.e. it is how one thinks of oneself as a professional (Walter, 2008). This concept has been assigned numerous titles. Literature examined in this study, for example, referred to the concept as vocational identity (e.g. Vernick Perdue et al., 2007), work personality (e.g. Strauser et al., 2010), work or work-based identity (e.g. Roodt and De Braine, 2011) and work or work-based self-concept (e.g. Roodt and De Braine, 2011).

There are a number of definitions of professional identity available in the literature. Billot (2010: 712) describes professional identity as "the values, beliefs and practices held in common with others of that

affiliation". Gibson et al. (2010: 21) argue that "contemporary definitions of professional identity seem to revolve around three themes: self-labeling as a professional, integration of skills and attitudes as a professional and a perception of context in a professional community". Several key commonalities exist between many of the definitions of professional identity examined. The first and most important is that professional identity is shared with a community: that one's professional identity links one with a group of others who are working in similar environments or performing similar tasks. It serves as a cohesive element that ties members of the practitioner community together. The second feature of professional identity is that it is highly fluid and changes over time, based on personal experiences as well as external feedback. Gibson et al. (2010: 21) argued that feedback from others in the profession is used by new professionals in developing their own professional identity.

These characteristics of professional identity are inextricably linked. Identities change over the course of one's lifetime in part due to interactions with others. The changes that occur in one's experience of professional identity then impact the ways in which one associates with professional peers as well as the types of colleagues and mentors who are sought. Socialization, sensemaking and experience created a feedback loop.

Research on professions

In the case of LIS professional identities, individual LIS practitioners do not consider their professional identity only in relation with other individual practitioners, but also in relation to their larger "profession". There is a body of literature on professions and the roles of status and power in understanding how professions present themselves within society and how they interact with other "professional", "semi-professional", or "non-professional" occupational groups (Allen, 1984; Alsbury, 2010; Axford, 1977; Davis, 2007; Day and Crask, 2000; Hartzell, 2007; Krejsler, 2005; Mellin et al., 2010; Shannon, 2009). In order to be labelled a profession, an occupation must satisfy several criteria, which include: (1) a specialized body of knowledge (Adams, 2010; Alsbury, 2010; Bates, 2012; Gerhold, 1974; Krejsler, 2005; McGrath Morris, 2008); (2) a set of professional ethics and/or code of conduct (Alsbury, 2010; Gerhold, 1974; Krejsler, 2005; McGrath Morris, 2008); (3) an organizing association which serves as a gatekeeper for membership (Adams, 2010; Gerhold, 1974; Krejsler, 2005); (4) entrance restrictions, such as completion of a prescribed educational program (Adams, 2010; Gerhold, 1974); and (5) authority or

autonomy over a particular set of behaviors, processes or activities related to their specialized body of knowledge (Alsbury, 2010; Krejsler, 2005).

The two major theoretical perspectives on professions in sociology are the functionalist perspective and the neo-Weberian perspective. The functionalist perspective emphasizes social harmony and envisions professions and semi-professions as playing cooperative functions within society just as the various organs of the body each play their own vital and complementary function. The approach focuses on the aspects of the definition of professions that emphasize professional ethics and a code of conduct that looks toward societal good and service to the community (Krejsler, 2005). Conversely, the neo-Weberian approach emphasizes societal conflict in its analysis of professions. This approach to professions describes professions as a mechanism for maximizing resource gains for members by controlling access to knowledge and the ability to perform certain tasks, procedures or operations. Unlike the functionalist theory which sees professionals as focusing on social good, the neo-Weberian approach describes professions as largely self-interested (Krejsler, 2005).

Whether people inside or outside of the librarianship profession embrace the functional or neo-Weberian perspective of professions will influence a librarian's ability to successfully perform tasks or enter roles that have not traditionally been seen as part of librarianship's professional domain. From the perspective of outsiders, if a member of a different profession does not believe that a certain function, whether it is data analytics, web programming or teaching, belongs within the realm of librarianship and they hold the view that librarians' activities in these areas represent a threat to other professional groups (i.e. they hold a neo-Weberian view of professions), then they may work to block librarians' or libraries' attempts to engage in these areas. If an outsider holds a functionalist perspective on professions, then they may be easier to convince that librarianship's entry into a non-traditional area of work supports shared societal goals.

At a macro-level, friction may also arise when members of the same profession hold different views about whether an activity falls within their view of the profession. A professional with a neo-Weberian view of the profession may be concerned about shifts in the professional focus of librarians if they see these changes as a challenge to their view of the profession. They may see the involvement of other approaches to performing librarianship that arose from different practitioner or academic disciplines as threatening

librarianship's claim of dominance over their specialized area of knowledge and practice.

The friction between librarians may also occur at the micro or individual level as individuals feel that changes in what constitutes librarianship or in what an individual librarian needs to know or do in order to be successful in their role can feel personally threatening. An individual practitioner of librarianship may not feel that they have the knowledge, skills, competencies or experience to take on a new set of tasks or a new approach to librarianship. This can lead to feelings of anxiety over their professional future or their current performance.

This study exploring the professional identity experiences of LIS graduates in non-library roles investigated one side of this exchange. The participants in this study were LIS graduates who had taken on roles that were outside of the traditional settings or work-areas connected with LIS education. Their involvement in these roles challenges traditional definitions of librarianship, suggesting a "librarianship-as-practice" model for the profession which focuses on LIS practitioners utilizing the skills and knowledge of librarianship in a variety of contexts, distinct from the "library-as-place" model of librarianship which emphasizes the role of the library as an institution within society (Rathbun-Grubb and Marshall, 2009; Wah and Choh, 2008).

LIS professional identities

There has been significant research conducted on LIS education and socialization with the aim of improving LIS curricula and developing ways to ensure that students quickly and successfully transition into professional roles. Socialization is the process through which individuals are assimilated into existing communities through the transfer of explicit and tacit knowledge including the learning of the rules, skills, values, norms, customs and symbols that make up that community's culture (Baker and Lattuca, 2010; Ibarra, 1999; Rummens, 2001).

There have been a few studies that have taken a longer term look at the experiences of LIS students in developing an LIS professional identity. These studies have asked the question of how LIS students come to see themselves as LIS professionals. Sare et al. (2012) conducted a grounded theory study on new academic librarians' perceptions of the profession in order to determine how these perceptions evolve from the time students enter library school through their first 6–24 months as a practicing professional. Broadly, they defined the process of deciding upon librarianship as involving three steps: (1) Experiencing/

constructing the library, (2) Exploring options and (3) Defining self (Sare et al., 2012: 184). Like several other studies of LIS students' decisions to enter LIS programs, Sare et al. (2012) found that the majority of the participants saw librarianship as a potential opportunity or a second career rather than a "lifelong dream" (pp. 186–188). Several authors have argued that the fact that librarianship is often a second or later career for individuals is a detriment to the profession and that LIS degrees should be promoted as a "first choice" career (Clemons, 2011).

There is some evidence from recently published works that the question of the boundaries of the LIS profession is still being explored and that the work of those who are pushing the traditional boundaries of the profession either through their professional practices or research endeavors requires greater exploration. Susan E. Thomas and Anne E. Leonard, for example, published a paper in 2014 on "Interdisciplinary librarians: Self-reported non-LIS scholarship and creative work" which explored this topic. The article suggested that the profession of librarianship remains strongly tied to the library-as-space and the activities associated with work within that institution:

Applied library science is work that takes place in the library: for example, cataloging, reference work, library instruction and collection development and management. Such work is clearly librarian work. A narrow definition of library scholarship limits academic librarians' scholarly activity to explicitly library science topics. Examples include bibliometrics, information literacy pedagogy and evidence-based management research. Such work is published and indexed in LIS periodicals for a librarian audience. An expanded definition of library scholarship includes scholarship and creative and professional activity outside of library and information science, for the library serves the entire college or university. Here librarians may be publishing in non-LIS journals or other periodicals, producing culture rather than documenting it, collaborating with other departments in grant writing or teaching of non-LIS topics and performing professional work. Part of expanding the definition of library scholarship and work is about meeting the needs of the institution rather than just the library system. (Thomas and Leonard, 2014: 548)

This suggests that additional work may be needed to present additional ways of thinking about librarianship or presenting ideas from librarianship to other disciplines and vice versa may still be needed. Presenting current LIS students with different models about how and where to work and publish may help

to attract a broader range of individuals into the profession who could introduce new ideas to librarianship which could contribute to innovations to both LIS practice and research.

There is some evidence from the articles available on the LIS profession that an expansion of practice and research outside of the traditional arena of library-based librarianship is seen as a threat to librarians' professional identities. Elaine R. Martin wrote an editorial for the *Journal of eScience Librarianship* entitled "Re-thinking our professional identity in light of new responsibilities" in which she discussed postings and debates among practicing librarians about the impact of embedded librarianship on librarian identity:

Recent discussion in blog posts and webinars suggest concerns that embedded librarians, as they steadily move outside the library and into research teams, may be neither "fish nor fowl". Is the embedded librarian's professional identity allied with the library or with the team? What are the potential effects of such role modifications? Will the embedded librarian somehow achieve more autonomy over their time and work if they are identified more closely with their research team than with their home library? Do you need a library to be a librarian? Where is the professional home for the embedded librarian? (Martin, 2013: 1)

The lack of research into the professional identities of LIS graduates working in non-traditional roles may contribute to this concern among practitioners who have never seen their identities expressed in contexts outside of the library.

Stereotypes are another key research focus for those studying the LIS profession. Many articles have been written on stereotypes of librarianship and the impacts that these stereotypes may have on recruiting new entrants into the profession (Clemons, 2011; Davis, 2007; Fallahay Loesch, 2010; Isaacson, 2000; Peresie and Alexander, 2005; Potter, 2009). The negative stereotype of the librarian is generally described as "the bespectacled, middle-aged matron with her premature graying hair coiffed in an austere bun with her finger pushed to her lips shushing young patrons talking or giggling in a library" (Fallahay Loesch, 2010: 31).

A central theme in the literature on perceptions of librarianship is that few people outside of the profession understand what librarians do and what value they bring to both library and non-library settings. White (1986: 94) wrote that:

Nobody else knows exactly what librarianship is and why it requires graduate-level education . . . They simply

do not relate a need for high-quality librarians to the value of libraries, or, at least, they don't know what it takes to become a good professional librarian.

Potter (2009) has suggested that librarians are defined by the library building and that librarians may need to consider breaking this association to demonstrate their full range of potential as professionals. Several writers have suggested that LIS professionals have not been particularly successful in promoting themselves and their profession. Cameron and Farnum (2007) looked for librarian profiles and credentials on university websites to see if academic librarians are using this medium as a location for promoting their professional status and experience and found that although librarians promote their libraries on their institutional websites, they seldom promote themselves.

Methods

This article uses data obtained through a grounded theory study of the professional identity experiences of LIS graduates in non-library roles to explore themes of professional identity in the profession(s) of librarianship and information science. The participants in this study were 20 professionals with Master's degrees in LIS working outside of libraries. Of the 20 participants, 19 received their degrees from ALA-accredited library schools in North America and all of the participants work in either the United States or Canada. Their work included roles in information management, policy analysis, taxonomy and search tool development, library software development and sales, and independent consultants or information entrepreneurs.

Two types of sampling were used in this study: snowball or chain referral sampling and theoretical sampling. Snowball sampling was used to identify potential participants, while theoretical sampling was used to determine when to cease data collection. Snowball or chain referral sampling was used to build a potential list of participants for this study. This method of sampling involves soliciting recommendations for participants from other participants or potential participants. This method is used to build samples of difficult-to-reach populations and LIS graduates in non-library careers may qualify as this type of population because they may not be involved in LIS professional associations, which are a common source of participant recruitment in LIS research (Scherdin and Beaubien, 1995; Schreiner and Pope, 2011; Sinotte, 2004; Stronski, 2004) and because they will be scattered across industry sectors and employer types. The

fact that this study is not seeking a representative sample also suggests that this method of participant identification would be appropriate (Biernacki and Waldorf, 1981). The snowball process was initiated through personal contacts of the researcher and research supervisors. In addition, interviewees were asked to recommend future participants.

Theoretical sampling involves the recruitment of participants based on the data that emerges through analysis with the objective of achieving theoretical saturation. This is a distinct characteristic of this method as “theoretical sampling violates the ideal of hypothesis testing in that the direction of new data collection is determined, not by a priori hypotheses, but by ongoing interpretation of data and emerging conceptual categories” (Suddaby, 2006: 634). Since no assumptions were made at the start of the study regarding which data to collect, an attempt was made to capture as broad a range of experiences as possible in the first rounds of sampling. It was understood that covering every possible permutation would not be possible; even the act of identifying every possible permutation of types of non-library roles, the paths that participants followed to reach those roles, or participants’ personal characteristics in terms of demographic or philosophical positions would not be possible.

Several steps were undertaken to enhance the variety of participants recruited in the first few rounds of interviewing. First, participants were taken from three referrers’ professional networks. Participants recommended by these early participants through snowball sampling were not recruited until later rounds of interviews in case they were recommended because of perceived similarities in experiences or attitudes. Second, participant demographic data was examined to determine if any trends would emerge that would suggest that a typology might be possible in the future. Although creating a typology was not the objective of this study, if certain patterns emerged that suggested that a certain participant characteristic or type of work experience led to similar attitudes or behaviors on the part of participants, then this would be used to guide future sampling. For example, if it was found that participants who completed their studies in the past five years had a different perspective on the profession from participants who completed their studies 15 to 20 years ago, or if male participants described their behaviors differently from female participants, then this would have been used to recruit future participants in a targeted way to capture groups based on these observations.

The data collection technique employed in this project was semi-structured interviews. Interviews

were conducted both face to face and by distance using web-conferencing software (collaborate web-conferencing platform). The semi-structured interviews included three sections. The first section of the interview asked participants to describe their career experiences from their decision to attend library school to the present. Participants were not interrupted during this narrative. The second section of the interview consisted of follow-up questions in response to comments that participants made during the first section. The final section of the interview included questions developed in the interview guide to address topics such as educational experiences, communities and how they identify or label themselves when communicating with others inside and outside of the profession. The interviews took between 30 and 90 minutes to complete.

Study data was analyzed with a view to maintaining theoretical sensitivity, theoretical sampling and constant comparison. This process of comparing batches of interviews was completed four times over the course of this study: (1) during the pilot study phase using the first two interviews; (2) after the first six interviews were completed; (3) after 16 interviews were completed; and (4) after 20 interviews were completed. To ensure that pre-conceptions or pet theories from an earlier batch did not lead to the forcing of code groups, categories were completely reanalyzed and regrouped each time. The first step in the analysis process in this study was line-by-line analysis of the transcript from each interview that was conducted. Observations and notes included two main elements: contextualizing comments and keywords from the response text. The context comments focused on what the participant wanted to communicate in their answer to the question. This included notes on what questions were being asked, what aspect of the question the interviewee had addressed and impressions of the overall intention of the response (the main idea the participant was communicating). The keywords include individual words and phrases taken from the participant’s response. The purpose of capturing keywords was to ensure that any codes that were developed from the interview reflected the participant’s own language. The second step in the analysis process was to look at all the keywords from each interview together to determine if there were any repeated keywords or response themes. The contextual notes helped with this sorting process because they allowed the researcher to see if the same keywords were being used to describe the same or different phenomena. The third stage of the analysis process was to develop a memo describing the phenomena observed and captured in the keyword

groups taken from the interview. The fourth stage of the analysis process was to look at all the grouped keywords from the interview and use them to develop a list of preliminary code categories. These code categories were created using gerunds. This level of coding was designed to find a small set of activities that described the experiences of the interview participant. The fifth stage of the analysis process involved the start of the constant comparison process. In this stage, the grouped keywords were explored to see if there were any common themes or topics that were discussed by different interview participants. Comparing incidents helped to eliminate pet theories or ideas about simple causal explanations. The sixth stage of the analysis process was to create memos for each of the concept or experience categories found in the interviews. The process of creating these memos allowed for a deeper examination of the concepts that arose in the interviews and for investigations into similarities that arose across interviews. While the individual interview memos focused on the key themes that were found in each interview, these constant comparison memos looked for trends across interviews. The seventh stage of the analysis process was to perform constant comparison between the gerund code categories found for each interview and to develop a list of categories that removed duplicates and described phenomena covered in multiple interviews. At several points in the process of developing a theory, initial categories were reanalyzed in relation to categories that were identified as potentially important to the identification of the participants' main concern, followed by the development of a theory that conceptually explained how participants resolved this concern. These categories were potential core categories. The final stage in the data analysis process was to examine all of the memos created through the coding process. The researcher conducted the interviews, prepared transcripts and conducted the analysis for this study. Analysis was conducted manually using the procedure outlined above without the use of coding software.

Discussion

The interviews conducted in this study provided insights into many aspects of participants' professional identity experiences and revealed how their experiences led them to develop personalized perceptions of both their own professional identities and the LIS profession. Several of the themes that emerged in these interviews are of particular relevance to the discussion of the impact of evolving practices and professional identities. These include

the ideas that the LIS profession is in transition, prompting the need to re-examine our professional identity or identities, that professional identity is dynamic and changes throughout the career and not just during the early years of professional socialization, that professional identity is influenced by others and that conflict can occur when professionals present divergent conceptions of the LIS profession based on their professional identity experiences.

Librarianship and information science as a profession in transition

Participants in this study echoed the earlier observation that the LIS profession is undergoing a period of change. They discussed the implications and scale of that change in describing roles inside and outside of libraries. Most participants had experience working in both library and non-library environments and ranged in experience from new graduates to practitioners with 25–30 years of professional experience. One participant linked shifts in librarianship to technological changes:

I think the definition is shifting and that might be driven in large part by shifts in the medium/media that we work with. So again, moving towards greater digitization of resources, more electronic resources, different types of multimedia resources. I believe that's part of the shift of role. And then I think it's also – there's – I think that MLIS programs have started adopting more IM [information management] and KM [knowledge management] content into their curriculum, so there's some exposure that happens through that. And then, I think umm that information management is a burgeoning, growing field, so my perception is that there are more jobs available in information management and that – even that just statistically there will be more MLIS graduates who are taking some those roles. So it's kind of just organic exposure. (Participant 7)

Another linked the changing role and practices of the LIS profession with generational shifts and the openness of new generations to working in new ways, particularly with technology:

I do think that some of what happened is that there has been a generation shift and people started coming out of library school more familiar with and more open to things like search engines and websites and stuff. And I think there was a really large influx and territory grab by non-librarians into things like search engines and websites and taxonomies and stuff and so the circle of people who were trying to solve this problem, they came late to this table. Fortunately, we're there now and we're there in a lot of different ways, but we came late to the

table. And I think that's absolutely a generation shift. (Participant 14)

The degree to which professionals believe that their profession is undergoing a period of transformation and transition is significant for professional change activities. If practitioners do not see changes occurring around them or do not view these changes as potentially impactful for their practice, then they might not be willing to engage in activities to respond to these changes. The majority of the participants in this study were engaged in roles that either involved working directly with the design or development of information technologies or depended on their use, which explains the emphasis on technology that was found throughout the interviews and illustrated in the quotes provided above. The need to learn about technology was not the only type of learning mentioned by participants. Engaging in planned learning to increase competitiveness or ensure ongoing professional relevance was a preferred strategy for most participants.

Professional identity is dynamic

The idea that professional identity is dynamic and changes over time is essential in allowing for both individual growth and development and the evolution of professions in response to external and internal pressures. Engaging in continuous learning activities, observing trends in the profession and accumulating professional experiences all led to changes in participants' professional identities over the course of their careers.

Socialization into the librarianship profession was a major topic in the LIS body of literature (Hazeri et al., 2009; Khalid, 2011; Sare et al., 2012; Scherdin and Beaubin, 1995; Taylor et al., 2010; Winston and Dunkley, 2002). Socialization teaches a person how to be a member of a profession. Socialization provides individuals with an idea of how the profession should function as well as their place within the profession. Much of the literature on socialization focuses on the experiences of library students or new professionals. While these formative experiences in the LIS environment are vital, this study provides support for the notion that socialization occurs throughout one's career and not just in the early years.

Several of the participants in the study reported transitioning from library to non-library roles over the course of their careers. They found ways to incorporate each of these roles into their existing professional identities and to find the connection between different types of roles and the values and interests that had

initially attracted them to librarianship. One participant described how they created a connection between their non-library work and the values of service and helping people resolve information needs that had attracted them to the LIS profession:

I'm always saying "I'm also a librarian" . . . there seems to be understanding that a librarian is somebody who helps to organize and find information and get information that people need to those people in an easy way. (Participant 7)

Shifting individual views of professional identity and how one views oneself as a professional are important because they impact career decisions including the tasks that they felt comfortable performing and the types of job opportunities that they are willing to pursue. The ability to link the work that they were doing back to their perceptions of librarianship was a key factor in whether a participant felt that a role fit with their professional identity.

And they came to the library and said, "You know, we've got all this information and we've got this webpage, but we can't figure out how to organize it. I'll bet you guys know how to do it". And so, my library manager, a very visionary woman, said to me "Go, do it. You know what you're doing". And I didn't know the first thing about this. And she said "Yeah, you do. You know all about it. It's just another medium. Go for it". (Participant 14)

This quote illustrates, the impact of peers in the LIS domain can be a key influence in leading an individual to think about employing their skills differently or engaging in new tasks that expand their views of the LIS profession.

Professional identity is influenced by others

The interviews conducted in this study indicated that perceptions of oneself as a professional as well as of one's profession at large both develop over the course of a person's career as a result of their experiences and interactions with others. Both perceptions become increasingly personalized and this process of personalization of professional identity can lead to conflict. Conflict results from different views of what the LIS profession is, what it does, what it should do and even who should be considered a member of this community.

In some cases, the perception of the profession developed through professional experiences will match 'mainstream' or dominant views of the LIS profession. In others, it will diverge from these views and lead individuals to question these dominant

assertions. For example, individuals may believe as a result of their socialization that the profession should take a certain stance on a given subject – such as a certain role with regards to technology – but may find that that role is not being fulfilled in accordance with their expectations in practice. They will develop theories as to why this is occurring which may include ideas about the way other members of their profession behave or ways in which people outside of the profession respond to members of the profession.

I think the academic libraries and the public libraries are just spending a lot more time looking ahead . . . they are in a more competitive environment – the public libraries in particular. They do have to look at where the users are going next and understanding the technologies and the world . . . the environment they are operating in. Same goes for the academic world – understanding technologies that are coming ahead and the challenges that are happening. (Participant 1)

This perception of the profession will impact the ways in which individuals choose to interact with those inside and outside of the profession and will be a major component of the extent to which they affiliate with others within the professional group.

Conflicting professional identities

These reformulations of the profession and questioning of what an individual LIS profession or the LIS profession's overall professional identity should include can lead to conflict as they challenge others to engage in similar sensemaking activities in which they must also reflect on their own views of their own and the profession's identity. These interactions can occur with other members of the LIS community:

It's kind of funny that people make that professional identity for themselves and then they want to put it on other people. They want to talk about it. They want it to be something that's a solid stable thing. (Participant 12)

These interactions may also occur with professionals outside of the LIS community. With external audiences, debates tended to be over stereotypes and misperceptions of the LIS profession:

And that being one reason why I continue to call myself a librarian – because I'm not the typical image of a librarian and so that will break someone's stereotypes for them. (Participant 3)

Conversations with participants suggested that there are multiple strategies that could be undertaken to respond to a perceived or real conflict between

individuals and their professional community: (1) assimilation, in which participants change themselves in order to fit into the communities with whom they wish to engage; (2) influencing or attempting to change the perceptions or beliefs of the group; and (3) withdrawal, in which individuals elect only to associate with communities of likeminded individuals and to avoid those who do not share their perceptions of the profession. The path chosen by LIS practitioners who feel that they have something to contribute to the profession has major implications for the future health and competitiveness of librarianship and information science.

The potential for conflict that arises when competing visions of the LIS profession and professional identities are presented poses several important questions for the LIS community. Will an LIS practitioner with a novel perspective attempt to influence their professional peers and help to set future research or practice directions or will they abandon their professional community to seek other like-minded individuals in other professional domains? Do LIS professionals feel that there are forums within the LIS community where they can challenge existing practice? What kinds of responses do they experience from their peers?

Significance for the LIS professional community

Professional identity can serve to create a bond between members of a professional community, but it can also be used as a tool for exclusion. Both individual professional identities and the identity of a professional group change over time in response to internal sensemaking and the influence of external factors. This ability for a professional identity to adapt and develop over time is essential for an individual or a profession to remain relevant and competitive in today's complex and dynamic environment.

The key question for the LIS profession to consider is its adaptability to changes and challenges to its professional identity. How inclusive is the profession of divergent and diverse viewpoints about how our professional ethics and principles should be put into practice? How welcoming are we of practitioners who are developing new ways of practicing librarianship? The answers to these questions are beyond the scope of this research project, but looking at the professional identity experiences of LIS graduates in non-library roles allowed for the development of recommendations for the LIS profession to support diversity and new experiences of the LIS professional identity.

Recommendations

Recommendation 1: Ensure that definitions of the LIS profession are sufficiently broad to allow participants to be able to find applications across settings and ways of working:

- Expose LIS students to different theories and models of librarianship;
- Include lessons on the changes in the theory and practice of librarianship over time in LIS education to support student perceptions that the profession has evolved in response to changes in information resources and information needs as a way of encouraging further innovation and openness to change;
- Do not focus exclusively on the library-as-space paradigm of librarianship, instead focus on the underlying values, practices and knowledge of the profession that can be applied across settings;
- Promote definitions of the profession which include LIS graduates working in a range of roles inside and outside of library settings.

Recommendation 2: Provide LIS students and practitioners with opportunities to see and interact with LIS practitioners who are engaged in different types of professional practices or who have different conceptions of the LIS profession:

- Hire faculty with a variety of professional experiences or seek these professionals as guest speakers in classes;
- Conference planning committees should try to include speakers with a variety of professional backgrounds or whose research may be applicable to a range of LIS practitioners;
- Recruit people from a variety of professional backgrounds to LIS program advisory boards;
- Provide various examples of professional role models so that LIS students can see the range of possible ways to be successful as a LIS professional;
- Invite LIS graduates who have engaged in non-traditional roles to speak to LIS students or at LIS conferences and professional development events.

These two recommendations are aimed at promoting a broader view of the definition of the LIS profession and providing opportunities for LIS professionals to witness and incorporate more diverse definitions of the profession into their professional identities. The rationale behind these recommendations is that by allowing increased exposure to different viewpoints and different ways of practicing

librarianship and/or information science promotes diversity in the practice of the LIS profession and allows individual professionals with professional identities that were built around roles or functions that have not traditionally be part of the LIS professional identity to find a place within the profession. Seeing different examples of how to express and perform librarianship can allow new LIS practitioners to find mentors and role models. A culture that promotes diversity of opinion and some flexibility in the individual interpretation of the profession's professional identity may allow the profession to be adaptable and flexible in the face of ongoing environmental changes and challenges. The LIS profession needs to be responsible and innovative if it is to grow and thrive in the coming decades.

Limitations and future research directions

As a qualitative grounded theory study this project did not attempt to capture a representative sample or achieve statistically significant results. The total number of LIS graduates employed in non-library roles was not calculated, so the number of participants required to obtain a representative sample of this population could not be established. A challenge in identifying this population is its transitory nature. People change roles, so individuals may enter and leave library and non-library roles many times throughout their careers. The sample is not statistically representative of the larger group of all individuals who complete ALA-accredited Master's degrees in LIS and work in non-library roles. This means that claims of generalizability cannot be made of the results of this study. The theory developed in this study attempts to capture participant experiences at a conceptual level so that it may be transferable to other contexts.

The use of snowball sampling was an issue of potential concern for the researcher. In snowball sampling, participants are identified through recommendations of existing participants. The possibility that people would recommend others with similar attitudes was anticipated. To counteract this possibility, the researcher started by eliciting recommended participants from multiple informants to ensure that several social networks were tapped for participants. The participants identified through snowball or referral sampling expressed independent views of the profession and had varied career experiences. With a qualitative study using the semi-structured interview technique it is not possible to capture the full range of experiences and a representative sample was not sought. Future studies could be conducted that target participants working in different types of work roles

or have had different career patterns than the ones experienced by the participants in this study.

Another limitation of this study is its scope. This is a grounded theory study and its goal is to generate a theory. Sampling stopped when saturation of the categories that emerged from the data occurred. The data collected in this study was very rich and offers many potential avenues for future research work and the possibility of many other theories which may be broader or narrower in scope than the one which was described in this paper. In order to manage the scope of this project, a single main concern of participants was identified and although data was not ignored, data that did not fit within the categories which were related to the main theme was not deeply explored. As a result, this study serves as a starting point for researcher rather than as an end-point. Any aspect of the theory that was described in this thesis could be further explored and expanded in a follow-up research project.

A key contribution of this study was that it highlighted the experiences of a population which has not been extensively studied in the past. Understanding the experiences of LIS graduates in non-library roles has significance to the LIS community as roles both within and outside of library settings evolve. This small-sample size qualitative study may serve as a foundation for additional studies. First, the themes that emerged in this study could be explored with a larger population of participants either through qualitative or quantitative data collection methods. Second, characteristics of LIS graduates themselves or their workplace experiences that lead them to either embrace or distance themselves from the LIS community could be explored. The recommendations that were put forward in this study could also be tested by LIS educators or associations. Finally, since this study focused on North American participants, the study could be replicated with LIS professionals from other regions to determine what similarities or differences exist.

Conclusion

Change challenges a profession's definition as well as the professional identities of its members. The LIS profession is undergoing a period of change due in part to the opportunities and threats posed by established and emerging technologies. LIS practitioners have found themselves operating in new roles (sometimes in new industries), using new tools and techniques, performing new functions and interacting with stakeholders, including clients and partners, with changing communication and information-use

expectations. These experiences lead these professionals to adjust and adapt their professional identities. These modified professional identities challenge other professionals within the profession to undertake similar sensemaking activities and either embrace or reject new conceptions of the LIS profession. Being able to embrace new concepts or ways of practicing librarianship has implications for how welcome and included professionals with diverse or divergent views and practices feel within the LIS professional community. The ability to embrace and incorporate new ideas and practices may also impact the LIS profession's ability to grow and thrive in a complex and rapidly changing world.

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References

- Adams R (2010) Exploring dual professional identities, the role of the nurse tutor in higher education in the UK: Role complexity and tensions. *Journal of Advanced Nursing* 67(4): 884–892.
- Allen G (2011) The proper status and functions of librarians in academic institutions. *Australian Library Journal* 60(4): 307–314.
- Alsburry B (2010) Considering co-constructed identities of profession and professional: Identifying a site for re-envisioning child and youth care. *Relational Child & Youth Care Practice* 23(2): 27–38.
- American Library Association (2014) Trends Report: Snapshots of a Turbulent World. Available at: http://www.districtdispatch.org/wp-content/uploads/2014/08/ALA_Trends_Report_Policy_Revolution_Aug19_2014.pdf (accessed 6 February 2016).
- Axford HW (1977) The three faces of Eve: Or, the identity of academic librarianship, a symposium. *Academic Journal of Academic Librarianship* 2(6): 276–285.
- Baker VL and Lattuca LR (2010) Developmental networks and learning: Toward an interdisciplinary perspective on identity development during doctoral study. *Studies in Higher Education* 35: 807–827.
- Bates MJ (2012) The information professions: Knowledge, memory, heritage. Available at <http://pages.gseis.ucla.edu/faculty/bates/articles/pdf/InfoProfessions.pdf> (accessed 28 October 2012).

- Biernacki P and Waldorf D (1981) Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods and Research* 10(2): 141–163.
- Billot J (2010) The imagined and the real: Identifying the tensions for academic identity. *Higher Education Research & Development* 29(6): 709–721.
- Cameron BD and Farnum C (2007) Promoting professionalism and academic librarianship: Observations on the marketing of the MLS. *Partnership: the Canadian Journal of Library and Information Practice and Research* 2(2). Available at <https://journal.lib.uoguelph.ca/index.php/perj/article/view/288> (accessed 26 February 2012).
- Clemons J (2011) Leading the way into the future of libraries. In: Wallace MK, Tolley-Stokes R and Estep ES (eds) *The Generation X Librarian: Essays on Leadership, Technology, Pop Culture, Social Responsibility and Professional Identity*. Jefferson, North Carolina: McFarland & Company, pp. 91–98.
- Davis KD (2007) The academic librarian as instructor: A study of teacher anxiety. *College & Undergraduate Libraries* 14(2): 77–101.
- Day E and Crask MR (2000) Value assessment: The antecedent of customer satisfaction. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior* 13.
- Dorner D, Campbell-Meier J and Seto I (2017) Making sense of the future of libraries. *IFLA Journal* 43(4): 321–334.
- Fallahay Loesch M (2010) Librarian as profession: A dynamic new role model. *Education Libraries* 33(1): 31–37.
- Gerhold PEJ (1974) Why we need a profession and how to get one. *Journal of Advertising Research* 14(5): 9–15.
- Gibson DM, Dollarhide CT and Moss JM (2010) Professional identity development: A grounded theory of transformational tasks of new counsellors. *Counsellor Education & Supervision* 50(1): 21–38.
- Hartzell G (2007) How do decision-makers become library media advocates? *Knowledge Quest* 36(1): 32–35.
- Hazeri A, Martin B and Sarrafzadeh M (2009) Exploring the benefits of KM education for LIS professionals. *Education for Information* 27: 1–20.
- Ibarra H (1999) Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly* 44: 764–791.
- Isaacson D (2000) On my mind. It isn't rocket science, it isn't even library science. *American Libraries* 31(8): 48.
- Kennan MA, Willard P and Wilson CS (2006) What do they want? A study of changing employer expectations of information professionals. *Australian Academic & Research Libraries* 37(1): 17–37.
- Khalid HM (2011) Socialization: A mechanism for the development of a profession the case of librarianship in Pakistan. *Pakistan Library & Information Science Journal* 42(4): 17–23.
- Krejsler J (2005) Professions and their identities: How to explore professional development among (semi-) professions. *Scandinavian Journal of Educational Research* 49(4): 335–357.
- McGrath Morris P (2008) Reinterpreting Abraham Flexner's speech, 'Is social work a profession?': Its meaning and influence on the field's early professional development. *Social Service Review* (March): 29–60.
- Martin ER (2013) Re-thinking our professional identity in light of new responsibilities. *Journal of eScience Librarianship* 2(2): 1–2.
- Mellin EA, Hunt B and Nichols LM (2010) Counselor professional identity: Findings and implications for counseling and interprofessional collaboration. *Journal of Counselling & Development* 89(2): 140–147.
- Peresie M and Alexander LB (2005) Librarian stereotypes in young adult literature. *Young Adult Library Services* 4(1): 24–31.
- Potter N (2009) Why are we still defined by our building? Available at http://www.cilip.org.uk/get-involved/special-interest-groups/diversity/Documents/NewProf_PotterBuilding_July09.pdf (accessed 28 February 2012).
- Rathbun-Grubb R (2009) Life after librarianship: What will retirement look like? *Feliciter* 55(5): 197–199.
- Roodt G and De Braine R (2011) The job demands-resources model as predictor of work identity and work engagement: A comparative analysis. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde* 37(2): 1–11.
- Rummens J (2001) Canadian identities: An interdisciplinary overview of Canadian research on identity. Available at http://canada.metropolis.net/events/ethnocultural/publications/identity_e.pdf (accessed 15 November 2012).
- Sare L, Bales S and Neville B (2012) New academic librarians and their perceptions of the profession. *Libraries and the Academy* 12(2): 179–203.
- Scherdin MJ and Beaubien AK (1995) Shattering our stereotype: Librarians' new image. *Library Journal* 120(12): 35–38.
- Schreiner SA and Pope BM (2011) Management training in library school: Do graduate programs prepare an individual for real world demands? *Endnotes: Journal of the New Members Round Table* 2: 1–16.
- Shannon DM (2009) Principals' perspectives of school librarians. *School Libraries Worldwide*, 15(2): 1–22.
- Sinotte M (2004) Exploration of the field of knowledge management for the library and information professional. *Libri* 54(3): 190–198.
- Strauser DR, O'Sullivan D and Wong AWK (2010) The relationship between contextual work behaviours self-efficacy and work personality: an exploratory analysis. *Disability and Rehabilitation* 32(24): 21–35.
- Stronski LM (2004) *Thinking outside the library: Employment trends of Special Libraries Association members*. Master's Thesis, University of North Carolina, USA.
- Suddaby R (2006) From the editors: What grounded theory is not. *Academy of Management Journal* 49(4): 633–642.

- Taylor SD, Perry AR, Barton JL, et al. (2010) A follow-up study of the factors shaping the career choices of library school students at the University of Alabama. *Reference and User Services Quarterly* 50(1): 35–47.
- Thomas SE and Leonard AE (2014) Interdisciplinary librarians: Self-reported non-LIS scholarship and creative work. *Library Management* 35(8/9): 547–557.
- Vernick Perdue S, Reardon RC and Peterson GW (2007) Person-environment congruence, self-efficacy and environmental identity in relation to job satisfaction: a career decision theory perspective. *Journal of Employment Counseling* 44: 29–39.
- Wah CP and Choh NL (2008) Back to the future: Augmenting competencies for Library 2.0. *Singapore Journal of Library & Information Management* 37: 1–12.
- Walter S (2008) Librarians as teachers: A qualitative inquiry into professional identity. *College & Research Libraries* 69(1): 51–71.
- White HS (1986) The accredited MLS and the promised land. *Library Journal* 111(8): 94–95.
- Winston MD and Dunkley L (2002) Leadership competencies for academic librarians: The importance of development and fund-raising. *College & Research Libraries*, March 2002.

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Factors for adoption of OSILS in university libraries of Bangladesh

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Abstract

This study identified the influential factors for adoption of OSILS in university libraries in Bangladesh. The survey was carried out among 196 library professionals from 14 private and seven public university libraries by a structured questionnaire which was adapted cautiously as per local arrangements after conducting a pilot survey. Factors for adoption of OSILS were analyzed by multiple regressions where overall satisfaction was used as dependent variable, and 14 factors for adoption of OSILS were applied as the independent variables. The entire model of regression analysis was established to be significant and revealed that cost-effectiveness, open source code, supporting community, backup and restore systems, easy to integrate with other software, and freedom from licensing fee significantly influenced library professionals to adopt OSILS. Moreover, an effort has been made for the first time to evaluate significant factors for adoption of OSILS in university libraries of Bangladesh that will prompt future research on OSILS.

Keywords

Bangladesh, factors for adoption, integrated library system, open source software, OSILS, university libraries

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Introduction

University libraries exist for meeting the information needs of their user community by providing “the right information to the right person at the right time” (Alam, 2018: 6). To provide quality services for the user community, information and communication technologies (ICTs) are being applied in library and information institutions which can be categorized into three wide segments: “Integrated Library Systems (ILS), information storage and dissemination, and administration management tasks” (Alam, 2017: 1). Generally, the ILS can be classified into three types which are open source, freeware, and proprietary/commercial (Chouhan, 2010). The practices of open source integrated library systems (OSILS) in library and information institutions have gained popularity and caused interest in recent years (Alam, 2018; Kumar and Jasimudeen, 2012).

The OSILS is “free application software for library automation” (Alam, 2017: 6) where a source code is

“available under the GNU General Public License” (GPL) (Riewe, 2008: 93). An ideal OSILS refers to having acquisition, cataloging, OPAC, serials control, patron management, circulation, inter-library loans (ILL), and report generation modules under one system (Ahammad, 2014; Khatun, 2014; Silvestre, 2010). Each of the functional modules of an OSILS is incorporated with an integrated interface. An OSILS has two graphical user interfaces (GUIs) which are GUI for staff and GUI for users. There is no basic difference among the functional modules of open source, freeware, and proprietary ILS, but the substantial disparity is apparent in the development process and distribution (Kumar and Abraham, 2009).

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The provisions of OSILS distribution as per the Open Source Initiative (2018) are:

free redistribution, open source code, derived works allowed, integrity of the author's source code, no discrimination against persons or groups, no discrimination against fields of endeavor, distribution of license, license must be technology-neutral, license must not be specific to a product, and license must not restrict other software.

The classic definition of the adoption is "making full use of a new idea as the best course of action available" (Mezbah-ul-Islam, 2003). In practice, this definition is used in all adoption analysis implicitly or explicitly.

From the available literature, two types of library systems, i.e. ILS and non-ILS, are used in Bangladeshi university libraries. Three kinds of ILS, i.e. open source, freeware, and proprietary, are used to automate the library systems of Bangladeshi universities. However, the majority of university libraries in Bangladesh have not yet adopted ILS. There are also some libraries which are not aware of ILS (Alam, 2017). In recent years, university libraries have tended to shift towards the implementation of OSILS globally including in Bangladesh. Based on the available literature, several scholars conducted research in Bangladesh on the usability of the Koha interface (Khatun and Ahmed, 2018), challenges and remedies for the adoption of OSILS (Alam, 2017), and sharing practical experience in implementing Koha (Ahammad, 2014). However, not much initiative has been taken to evaluate the significant factors for the adoption of OSILS in Bangladesh. So, it is desirable to evaluate the significant factors which influence library professionals to adopt OSILS in Bangladeshi university libraries. Therefore, it can be concluded that for the first time an initiative has been taken to evaluate the significant factors for adoption of OSILS in Bangladeshi university libraries.

Literature review

An open source integrated library system (OSILS) is developed by the combination of open source software and an integrated library system (ILS). The term ILS is recognized as a library management system (LMS) which is an enterprise resource planning (ERP) system for a library that is used to manage patrons, track items, prepare orders, and pay bills (Anuradha and Sivakaminathan, 2009; Uzomba et al., 2015). Silvestre (2010) stated that "an OSILS is planned, conceived and developed to coordinate and automate several library functions, and register

all the library operations". Müller (2011: 2) described the OSILS as "multifunctional adaptable software applications" that permits library personnel to "manage, catalog and circulate their library materials to users". Kiriyanant (2012) mentioned that each user has a unique ID in the patron database and each item has a unique ID in the bibliographic database which allow OSILS for tracking its every operation. Libraries should choose appropriate OSILS based "not only on the performance and efficiency of the software but also on its fundamental flexibility to readily adapt to the forthcoming demands and necessities of their users" (Uzomba et al., 2015: 4). A reliable and excellent OSILS improves access to electronic or printed resources that are available virtually or physically in a library which may be online journals, e-books, online databases, digital institutional repositories, or printed books, journals and CD/DVDs (Omeluzor et al., 2012).

To avoid alienating for-profit businesses and to be part of the free software community, the term "open source software" is used rather than "free software" so that "free to copy or modify without charge" would not be confused (Riewe, 2008). Rafiq and Ameen (2009: 2) described OSS as "computer software whose source code is available under GPL that allows users to use, change and improve the software, and to redistribute it in modified or unmodified form". Kenwood (2001) defined OSS as the free software where the source code is available under GPL. The copyright holders provide the right to "study, use, copy, and distribute the software with or without modifications", and that can be offered "either with or without a fee" (p. 11). Contrary to OSILS, the copyright holders of proprietary ILS provide only "binary code and withhold source code" so that users can "use the software but cannot modify, progress or study" (Ahammad, 2014: 8).

Koha, Evergreen, NewGenLib, PMB, OPALS, EspaBiblio, Emilda, InfoCID, GNUteca, Jayuya, OpenBiblio, oBiblio, OpenAmapthèque, PhpMyLibrary, SLiMS, and Quali OLE are available OSILS packages. Among them, PhpMyLibrary, OpenBiblio, Emilda, and Jayuya are considered inactive OSILS because no improvement action has been found on their discussion lists or in their source codes for a long time. In addition, Quali, oBiblio, OpenAmapthèque, OPALS, Gnuteca, and InfoCid are identified to be just released due to having no significant mass of users, developers, and contributors currently. SLiMS and PMB are considered improving and emerging OSILS. NewGenLib and Evergreen are considered sustainable but improving OSILS. Lastly, Koha is established

as a sustainable, mature, and popular OSILS (Alam, 2018; Müller, 2011).

Rafiq and Ameen (2009) presented an analysis of 370 responses from 48 countries including Pakistan, India, Australia, Canada, USA, and UK. They revealed that OSILS adoption in libraries and information institutions is still at infancy level. Kumar and Abraham (2009) identified that lack of awareness and knowledge in the technology of OSILS among library professionals restricts the extensive adoption of OSILS. The OSILS has created opportunities for libraries whose budget shrinks and cannot afford the cost of commercial ILS (Kiriyanant, 2012). Alam and Islam (2011) reviewed automation systems and found that the automated systems of Bangladeshi libraries are still in their infancy. Many library professionals in Bangladesh are trying to develop their libraries as global standards. BRAC University (BRACU) Library developed their ILS through Koha in 2010 (Afroz, 2014). Koha is used by 21 university libraries, two university libraries, and three institutional libraries in Bangladesh (Koha-community, 2018). According to the SLiMS (Senayan Library Management Software) official website, three institutional libraries, and two university libraries in Bangladesh use SLiMS (SLiMSBD, 2018). But SLiMS is not yet used by any university library in Bangladesh (Habib, 2015). BRACU Library integrated Radio Frequency Identification (RFID) with Koha in 2011 to protect book stealing. Subsequently, North South University (NSU) Library adopted RFID-based ILS in 2012. The Shahjalal University of Science and Technology (SUST) Library in 2013, Bangladesh University of Engineering and Technology (BUET) Library in 2014 and Sher-e-Bangla Agricultural University (SAU) Library in 2015 integrated RFID technology with their Koha OSILS (Alam, 2017; Rahman, 2014). To enhance the adoption of OSS in Bangladesh, BRACU Library, East West University (EWU) Library, Daffodil International University (DIU) Library, and Bangladesh Association of Librarians, Information Scientists and Documentalist (BALID) organized training or workshops on various OSS like Koha, SLiMS, Greenstone, DSpace, Vufind, Zotero, Drupal, etc. Moreover, they also help in the development of ILS in other libraries via Koha or SLiMS (Alam, 2018).

Budget is not the only factor that causes libraries to shift towards the implementation of OSILS from proprietary ILS. Keast (2011: 8) found two main reasons for turning to OSILS from previous systems of Australian libraries – specifically, the lack of flexibility in achieving customizations and

budgetary difficulties. Poulter (2010) cites strategic reasons apart from the budget, as well as dissatisfaction regarding proprietary ILS, for making libraries adopt OSILS. Singh (2013) revealed that the common factor for adoption is the cost-effectiveness of OSILS compared to proprietary ILS among libraries in the USA. Libraries refer to many causes for shifting to OSILS which are usability, cost-effectiveness, and community and vendor support (Singh, 2013). In addition to these reasons, flexibility and ease of customization are also significant factors for the widespread adoption of OSILS (Carlock, 2008). Singh (2014) suggested that the libraries that have already migrated must share their experience, knowledge, and recommendations for every stage of the migration process to encourage more libraries to adopt OSILS. Kohn and McCloy (2010) stated that they were determined to migrate to an OSILS due to frustration with their existing proprietary ILS. Dennison and Lewis (2011) showed another reason for migrating to OSILS from proprietary ILS which was much more complex than the necessity: no one understood the system due to their staff turnover. This lack of expertise increased yearly costs which led to a move towards OSILS. Singh (2013) argued that functionality is one of the factors for choosing OSILS. Riewe (2008) showed that the ability to customize, portability, cost, and freedom from vendor lock-in are the reasons for choosing OSILS based on a survey. Sunil and Harinarayana (2013) argued that when a library selects OSILS, it chooses not only a means of reducing its costs on the software but also opportunities to become free concerning its choices of software vendors. Arch (2011) said that open access and open source are philosophically associated with intellectual freedom, which is eventually the mission of libraries. The other two common reasons are cost and functionality which are the two key aspects that are mentioned in any discussion on the issue of choosing an OSILS. One of the advantages of OSILS is the capability to customize and develop functions that are specific to any library. Gireesh Kumar and Jayapradeep (2015) showed that 85% of the respondents support the implementation of OSILS in libraries. The highest factor for adoption of OSILS is cost-effectiveness, followed by openness to customize, collaborative network of user community, freedom from licensing and maintenance fee, vendor lock-in, open source code, ease of installation and maintenance, concerns regarding the suppliers of proprietary ILS, availability of quality documentation, and to become a part of the consortium.

Objective of the study

In Bangladesh, 21 university libraries are now using Koha as OSILS software, and a small number of university libraries are in the process of developing their OSILS using Koha. However, no university libraries in Bangladesh are using any other OSILS software yet apart from Koha. Here, a question is raised: which factors influence library professionals for the adoption of the existing OSILS in the university libraries of Bangladesh? This study has made an objective based on the questions raised, research gap, and social impact. The objective of this study is to identify the influential factors for adoption of OSILS in the university libraries of Bangladesh.

Hypothesis

The study has formulated a hypothesis (the higher the desirable features of the software, the higher the adoption of OSILS).

Methodology

A quantitative approach was used in the methodology. In Bangladesh, there are 41 public, 103 private, and three international universities (UGC, 2018). Among them, the study selected 14 private and seven public universities whose libraries were using OSILS. For attaining the research objective and testing the hypothesis, the study attempted to collect quantitative data from primary sources of information through a structured questionnaire. The use of OSILS, 14 factors for the adoption of OSILS, one statement regarding overall satisfaction towards OSILS, and demographic information of library professionals were included in the questionnaire. Fourteen factors were incorporated from the literature review and expert opinions. A five-point agreement scale was made using “5 = Strongly Agree, 4 = Agree, 3 = Agree Less, 2 = Disagree, and 1 = Strongly Disagree” to identify the significant factors for the adoption of OSILS. Another five-point satisfaction scale was constructed using “5 = Highly Satisfied, 4 = Very Satisfied, 3 = Satisfied, 2 = Less Satisfied, and 1 = Not Satisfied” to assess the overall satisfaction level of library professionals towards existing OSILS. The questionnaire was adapted cautiously as per local arrangements after conducting a pilot survey. The pilot survey helped to reshape the technical and technological terms that have been used in the Bangladeshi context. The researcher visited the chosen university libraries and distributed the questionnaire to the library staff with the minimum Master’s/Bachelor’s/PGD qualification in Library and Information Science. Out

Table 1. Respondents of the study.

SL	University	Category	Respondents
1	University of Dhaka	Public	25
2	Bangladesh University of Engineering and Technology	Public	14
3	University of Rajshahi	Public	12
4	Khulna University of Engineering and Technology	Public	8
5	Shahjalal University of Science and Technology	Public	7
6	Sher-e-Bangla Agricultural University	Public	7
7	Chittagong Veterinary and Animal Sciences University	Public	4
8	East West University	Private	15
9	International Islamic University Chittagong	Private	15
10	BRAC University	Private	14
11	Northern University Bangladesh	Private	11
12	Daffodil International University	Private	10
13	Independent University Bangladesh	Private	8
14	University of Liberal Arts Bangladesh	Private	8
15	Eastern University	Private	7
16	Southeast University	Private	7
17	Green University Bangladesh	Private	6
18	Premier University	Private	5
19	United International University	Private	5
20	Chittagong Independent University	Private	4
21	Manarat International University	Private	4
	Total		196

of 262 questionnaires, 223 (85.11%) were returned and of these 196 (74.81%) which were completely filled up by the library professionals were considered for analysis (Table 1).

Reliability

The Bartlett’s test of sphericity evaluated the suitability of the data for factor analysis. The value of Bartlett’s Test should be 0.05 or less (Schierholz and Laukkanen, 2007). The Bartlett’s test has a p-value = 0.001 for 14 factors indicating that the internal consistency of the data is suitable. The reliability of each multiple-item scale was assessed by the Cronbach’s Alpha. Nunnally (1978: 245) recommended that “alpha values should be 0.70 or greater”. The results of Cronbach’s Alpha suggested that internal consistency of all items is $\alpha = 0.880$, and 14 factors for the adoption of OSILS is $\alpha = 0.881$ indicated that the overall questionnaire items have a good reliability.

Table 2. Inter-item correlation matrix of factors for adoption.

Factors	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	Alpha
F1	1.000	.525	.313	.258	.284	.365	.396	.517	.511	.351	.378	.348	.098	.088	.874
F2	.525	1.000	.455	.365	.473	.384	.329	.413	.488	.282	.343	.371	.286	.096	.871
F3	.313	.455	1.000	.404	.532	.425	.516	.419	.341	.442	.502	.370	.265	.161	.870
F4	.258	.365	.404	1.000	.317	.357	.389	.327	.254	.535	.468	.434	.252	.236	.873
F5	.284	.473	.532	.317	1.000	.525	.542	.482	.286	.353	.429	.243	.204	.205	.871
F6	.365	.384	.425	.357	.525	1.000	.501	.488	.363	.581	.489	.239	.258	.210	.869
F7	.396	.329	.516	.389	.542	.501	1.000	.683	.326	.442	.461	.261	.138	.134	.869
F8	.517	.413	.419	.327	.482	.488	.683	1.000	.393	.380	.399	.246	.211	.165	.869
F9	.511	.488	.341	.254	.286	.363	.326	.393	1.000	.465	.399	.384	.158	-.014	.874
F10	.351	.282	.442	.535	.353	.581	.442	.380	.465	1.000	.606	.461	.249	.226	.868
F11	.378	.343	.502	.468	.429	.489	.461	.399	.399	.606	1.000	.375	.337	.266	.868
F12	.348	.371	.370	.434	.243	.239	.261	.246	.384	.461	.375	1.000	.345	.197	.875
F13	.098	.286	.265	.252	.204	.258	.138	.211	.158	.249	.337	.345	1.000	.556	.880
F14	.088	.096	.161	.236	.205	.210	.134	.165	-.014	.226	.266	.197	.556	1.000	.888

Validity

Several methods have been used to evaluate the validity of the factors for adoption of OSILS in university libraries of Bangladesh.

Item loading. The loading items of extracted variables were shown between 0.578 and 0.749 for 14 factors indicating that all the variables successfully represent the factor dimension.

Commonalities. Nadiri (1970) recommended that all commonalities of a perfectly adequate sample above 0.5 can be accepted. The commonalities of the extracted variables were shown between 0.517 and 0.721 for 13 out of 14 factors, indicating that most of the variables are within the acceptable range.

KMO value. The significant level of Kaiser-Meyer-Olkin (KMO) value is above 0.7. The overall KMO value matrix for 14 OSILS factors is 0.859, meaning that the sample size (196) is statistically significant for the exploratory factor analysis and there is no problem with the data.

Discriminant validity. If the average variations derived from the correlated latent variables are higher than the alpha coefficient of each scale, discriminating validity is achieved (Andaleeb and Simmonds, 1998; Fornell and Larcker, 1981). The results support discriminating validity because the correlation between one factor and the other is as low as the alpha coefficient of each factor (Table 2).

Factor analysis. Table 3 shows that only three factors were recovered and all the items were loaded on the

factors when no constraints were imposed on the extraction of factors in a factor analysis with varimax rotation. Each of the three factors had an eigenvalue of greater than one which had a total of 60.03% of the variance. However, the results support the validity of the data.

Data analysis and findings

Demographic information of library professionals

Table 4 demonstrates that among the respondents, 68 (34.7%) were female and 128 (65.3%) were male. Among the respondents, 76 (38.8%) were from the public university libraries and 120 (61.2%) were from the private university libraries. The highest number of responses were from Library Officers (54, 27.6%), followed by Assistant Librarian (51, 26.0%), Assistant Library Officers (28, 14.4%), Deputy Librarian (19, 9.7%), Sr Assistant Librarian (17, 8.7%), Sr Library Officers (13, 6.6%), Library Assistant (4, 2.0%), Librarian (4, 2.0%), Junior Assistant Librarian (3, 1.5%), and Joint Librarian (3, 1.5%). The more significant proportion of the responses were from the age group 31 to 40 years (100, 51.0%), followed by 21 to 30 years (50, 25.5%), 41 to 50 years (35, 17.9%), and 51 to 60 years (11, 5.6%). The more significant number of the respondents 164 (83.7%) have a Master's, followed by PGD 12 (6.1%), MPhil nine (4.6%), PhD nine (4.6%), and Bachelor's two (1.0%) in Library and Information Science as the highest professional degree. Among the respondents, 79 (40.3%) do not have an ICT degree. Only 73 (37.2%) respondents have a Certificate course, 35 (17.9%) respondents have PGD, and nine (4.6%) respondents have a Master's in ICT. Among the respondents, 79.1% have training on Koha, and 96.9% have practical

Table 3. Factor analysis with varimax rotation.

Component	Extraction sums of squared loadings			Rotation sums of squared loadings		
	Eigenvalue	% of Variance	Cumulative %	Eigenvalue	% of Variance	Cumulative %
Factor-1	5.756	41.113	41.113	3.493	24.948	24.948
Factor-2	1.510	10.786	51.899	2.852	20.371	45.319
Factor-3	1.138	8.126	60.025	2.059	14.707	60.025
Factor-4	.972	6.940	66.966			
Factor-5	.782	5.588	72.554			
Factor-6	.682	4.873	77.427			
Factor-7	.571	4.082	81.509			
Factor-8	.511	3.651	85.161			
Factor-9	.475	3.393	88.554			
Factor-10	.417	2.980	91.533			
Factor-11	.397	2.835	94.368			
Factor-12	.271	1.936	96.305			
Factor-13	.263	1.879	98.184			
Factor-14	.254	1.816	100.000			

Extraction method: Principal Component Analysis.

experience in OSILS. The significant number of the library professionals (56, 28.6%) have three years' practical experience, followed by (47, 24%) five years or more, (42, 21.4%) four years, (26, 13.2%) one year, and (25, 12.8%) two years of working experience. The demographic information of the sample suggested the response of a large cross-section of the population.

Descriptive statistics of factors for adoption of OSILS

Table 5 shows that "international standard options" occupied the highest mean of 4.33 among the 14 factors for the adoption of OSILS, followed by "adequate functionalities" which scored 4.27, both "easy to customize for local needs" and "easy backup and restore system" which scored 4.23, "control over the data and software" scored 4.19, both "availability of open source code" and "ability of data migration" scored 4.18, "adequate features" scored 4.17, "freedom from licensing fee" scored 4.16, both "cost-effectiveness" and "supporting community" scored 4.13, "easy to integrate with other software" scored 4.11, and "quality documentation" scored 3.95. On the other hand, the "concerns about the suppliers of proprietary ILS" formed the lowest perceived mean of 3.56 among the factors for the adoption of OSILS.

Overall professionals' satisfaction with OSILS

The study included a statement "What is your overall satisfaction level in existing OSILS of your university library" in the questionnaire to evaluate the effectiveness of the existing OSILS. Table 6 shows that the overall satisfaction mean was 3.76 indicating that the

library professionals of Bangladeshi university libraries showed positive acceptance of OSILS and their level of satisfaction towards it is very good.

Multiple regressions analysis

A hypothesis was developed earlier to evaluate which factors influence library professionals most significantly to adopt OSILS in university libraries of Bangladesh. Multiple-regression analysis was applied for this purpose where 14 factors for adoption of OSILS were used as independent variables, and overall satisfaction of library professionals was used as the dependent variable. Table 7 illustrates that the model clarified 18% variation in professionals' satisfaction, as suggested by adjusted R^2 value ($R^2 = .180$). The P value of the regression model is ($P < 0.001$) indicating that the entire model was established as significant. Many researchers apply the Cohens' criterion "(less than .01 = trivial; .01 up to .30 = weak; .30 up to .50 = moderately strong; .50 or greater = strong)" to determine whether the correlation between independent and dependent variables is weak or strong (Cohen et al., 2003). The correlation was appropriately recognized in this study as moderately strong (Multiple R = .489) as per the Cohens' criterion.

Residuals are the difference between the obtained and predicted dependent variable scores which represent unexplained variation. A model with a large regression sum of squares in comparison to the residual sum of squares indicates that the model accounts for most of the variation in the dependent variable (Andaleeb and Simmonds, 1998; Michigan State University, 2017). Table 8 shows that the regression

Table 4. Demographic information of respondents.

Variable	Classification	Frequency	Percent	Valid %	Cumulative %
Gender	Female	68	34.7	34.7	34.7
	Male	128	65.3	65.3	100.0
Category of University	Public	76	38.8	38.8	38.8
	Private	120	61.2	61.2	100.0
Designation	Library Officer	54	27.6	27.6	27.6
	Assistant Librarian	51	26.0	26.0	53.6
	Assistant Officer	28	14.4	14.4	68.0
	Deputy Librarian	19	9.7	9.7	77.7
	Sr. Asst. Librarian	17	8.7	8.7	86.4
	Sr. Library Officer	13	6.6	6.6	93.0
	Library Assistant	4	2.0	2.0	95.0
	Librarian	4	2.0	2.0	97.0
	Jr. Asst. Librarian	3	1.5	1.5	98.5
	Joint Librarian	3	1.5	1.5	100
Age group	31–40 years	100	51.0	51.0	51.0
	21–30 years	50	25.5	25.5	76.5
	41–50 years	35	17.9	17.9	94.4
	51–60 years	11	5.6	5.6	100.0
Professional Degree	Master's	164	83.7	83.7	83.7
	Diploma	12	6.1	6.1	89.8
	MPhil	9	4.6	4.6	94.4
	PhD	9	4.6	4.6	99.0
	Bachelor	2	1.0	1.0	100.0
ICT Degree	None	79	40.3	40.3	100.0
	Certificate	73	37.2	37.2	77.5
	Diploma	35	17.9	17.9	95.4
	Master's	9	4.6	4.6	100.0
Training	Yes	155	79.1	79.1	79.1
	No	41	20.9	20.9	100.0
OSILS experience	Yes	190	96.9	96.9	96.9
	No	6	3.1	3.1	100.0
Years of experience	Three years	56	28.6	28.6	28.6
	Five years or above	47	24	24	52.6
	Four years	42	21.4	21.4	74
	One year	26	13.2	13.2	87.2
	Two years	25	12.8	12.8	100.0

model has a large residual sum of squares (83.876) compare to regression sum of squares (26.369) indicating that the model does not count for most of the variations in the dependent variable.

Table 9 shows that six factors for adoption of OSILS had significant impact on professionals' satisfaction. The six significant factors were freedom from licensing fee ($b = 0.183$; $p < 0.043$); supporting community ($b = -0.236$; $p < 0.013$); easy to integrate with other software ($b = 0.219$; $p < 0.019$); cost-effectiveness ($b = 0.273$; $p < 0.002$); easy backup and restore system ($b = -0.241$; $p < 0.020$); and open source code ($b = 0.211$; $p < 0.011$). Another eight factors, control over the data and software ($b = -0.107$, $p > 0.229$); data migration ($b = 0.054$, $p > 0.520$); easy to customize for local needs

($b = 0.056$, $p > 0.538$); adequate features ($b = -0.061$, $p > 0.549$); adequate functionalities ($b = 0.058$, $p > 0.555$); international standard options ($b = 0.084$, $p > 0.362$); quality documentation ($b = 0.001$, $p > 0.997$); and concerns about the suppliers of proprietary ILS ($b = 0.105$, $p > 0.199$) were not significant. However, the supporting community and easy backup and restore system had a significant negative impact on professionals' satisfaction. In addition, control over the data and software, and adequate features had an insignificant negative effect on professionals' satisfaction. The standardized beta values suggested that cost-effectiveness of OSILS had the most significant effect on professionals' satisfaction. The results of the standardized beta values also indicated that library professionals attribute

Table 5. Descriptive statistics of factors for adoption of OSILS.

SL	Factors	Mean	SD	Item loading	Commonalities
1.	Higher the availability of international standard options, higher the adoption of OSILS	4.33	.698	.735	.558
2.	Higher the availability of adequate functionalities, higher the adoption of OSILS	4.27	.767	.705	.633
3.	Higher the ability of easy to customize for local needs, higher the adoption of OSILS	4.23	.843	.674	.625
4.	Higher the availability of easy backup and restore system, higher the adoption of OSILS	4.23	.719	.729	.552
5.	Higher the ability of control over the data and software, higher the adoption of OSILS	4.19	.667	.705	.517
6.	Higher the availability of open source code, higher the adoption of OSILS	4.18	.769	.578	.634
7.	Higher the ability of data migration, higher the adoption of OSILS	4.18	.747	.629	.445
8.	Higher the availability of adequate features, higher the adoption of OSILS	4.17	.811	.713	.721
9.	Higher the freedom from licensing fee, higher the adoption of OSILS	4.16	.806	.619	.584
10.	Higher the availability of cost-effectiveness, higher the adoption of OSILS	4.13	.771	.613	.665
11.	Higher the availability of supporting community, higher the adoption of OSILS	4.13	.760	.656	.522
12.	Higher the ability of easy to integrate with other software, higher the adoption of OSILS	4.11	.813	.712	.575
13.	Higher the availability of quality documentation, higher the adoption of OSILS	3.95	.806	.691	.674
14.	Higher the concerns about the suppliers of proprietary ILS, higher the adoption of OSILS	3.56	.940	.749	.698

Table 6. Descriptive statistics of overall professionals' satisfaction.

Statement	N	Minimum	Maximum	Mean	STD
"Your overall satisfaction level in existing OSILS of your university library"	196	1	5	3.76	.752
Valid N	196				

the second highest significant magnitude to the easy to backup and restore systems of OSILS, followed by supporting community, easy to integrate with other software, open source code, and freedom from licensing fee.

Figures 1 and 2 show that the histogram and normal probability plot explain no deviation from the assumptions and usually the dependent variable is distributed. The residual statistics would be reasonably confident that the use of the model would not be severely restricted.

After the normality of the data in the regression model is achieved, the subsequent step is to determine whether the independent variables in a model are similar through multicollinearity tests. In a good

regression model neither multicollinearity nor the correlation between independent variables should occur (Andaleeb and Simmonds, 1998). The multicollinearity is problematic because it can increase the variation of the regression coefficients, making them unstable and complicated to interpret. According to the Spsstests.com (2015), "if the variance inflation factor (VIF) value lies between 1 and 10, then there is no multicollinearity problem". But, "if the VIF <1 or > 10, then there is a multicollinearity problem". As per Minitab.com (2017), "If the VIF = 1 there is no correlation, if the VIF = 1 < VIF < 5 there is moderate correlation, and if the VIF = > 5 to 10 there is high correlation between predictors". These indicators are applied to explain how much correlation between predictors (multicollinearity) exists in a regression model. Based on the coefficients output – collinearity statistics (Table 9), obtained VIF values are 1.928 for freedom from licensing fee, 2.081 for supporting community, 1.856 for control over the data and software, 1.694 for data migration, 1.979 for easy to customize for local needs, 2.032 for easy to integrate with other software, 2.426 for adequate features, 2.330 for adequate functionalities, 1.803 for cost-effectiveness, 2.504 for easy backup and restore system, 2.017 for international standard options, 1.617 for open source code, 1.781 for quality documentation, and 1.591 for

Table 7. Model summary of factors for adoption of OSILS.

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R Square change	F change	df1	df2	Sig. F change
1	.489 ^a	.239	.180	.681	.239	4.064	14	181	.000

^aPredictors: (constant), F14, F9, F4, F5, F12, F8, F2, F6, F13, F3, F11, F1, F10, F7.

^bDependent variable: Overall professionals' satisfaction.

Table 8. ANOVA table of factors for adoption of OSILS.

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	26.369	14	1.883	4.064	.000 ^b
	Residual	83.876	181	.463		
	Total	110.245	195			

^aDependent variable: Overall professionals' satisfaction.

^bPredictors: (Constant), F14, F9, F4, F5, F12, F1, F6, F13, F3, F8, F11, F2, F7, F10.

concerns about the suppliers of proprietary ILS. The VIF values obtained from 1.591 to 2.504 indicated that a moderate correlation exists between the predictors, and multicollinearity symptoms are not present in the regression model.

Discussion

A total of 223 (85.11%) questionnaires were returned out of 262. Among them, 196 (74.81%) questionnaires were found to be completely filled in by the respondents including 120 professionals from 14 private and 76 professionals from seven public university libraries and these were considered for analysis. The main objective of this study is to identify the significant factors for the adoption of OSILS in Bangladeshi university libraries from library professionals' point of view. The multiple regression analysis assessed the significant factors for OSILS adoption. The international standard options occupied the highest perceived mean among the 14 factors for OSILS adoption, followed by the following top five features: adequate functionalities, easy to customize for local needs, easy backup and restore system, both freedom from licensing fee, and availability of open source code. Concerns about the suppliers of proprietary ILS formed the lowest perceived mean. The overall satisfaction of library professionals towards OSILS showed positive acceptance, indicating the efficiency of the existing OSILS in Bangladeshi university libraries.

Hypothesis: The higher the desirable features of the software, the higher the adoption of OSILS.

A hypothesis was developed earlier to evaluate the significant factors for adoption of OSILS in Bangladeshi university libraries from the library professionals' viewpoint. To test the hypothesis, a multiple-regression analysis was applied where overall satisfaction was used as a dependent variable and 14 factors were used as independent variables. The entire model of regression analysis of the higher the desirable features of the software, the higher the adoption of OSILS was established to be significant and explained 18% of the variation in user satisfaction. The regression models recommended that cost-effectiveness, open source code, supporting community, backup and restore systems, easy integration with other software, and freedom from licensing fee significantly influenced library professionals to adopt OSILS. The supporting community and easy backup and restore system had a significant negative effect on professionals' satisfaction. The standardized beta values indicated that the cost-effectiveness of OSILS had the greatest impact on library professionals' satisfaction. The results of this study also suggested that library professionals attach the second highest importance to the easy backup and restore systems of OSILS, followed by supporting community, easy integration with other software, open source code, and freedom from licensing fee.

The Bartlett's Sphericity Test and Cronbach's Alpha evaluated the reliability of each multiple-item scale indicating that the overall questionnaire items of library professionals are very reliable. To evaluate the validity of the study several methods were used. The correlation between one factor and the other is not as strong as the alpha coefficient of each factor, which supported discriminating validity. Only three factors were recovered and all the items were loaded on the factors when no constraints were imposed on the extraction of factors in a factor analysis with varimax rotation. Each of the three factors had an eigenvalue of greater than one which had a total of 60.03% of the variance which indicating the validity of the data. The overall Kaiser-Meyer-Olkin (KMO) value matrix is 0.859 for 14 factors indicated that the sample size (196) is statistically significant for the exploratory

Table 9. Regression results with 14 factors.

Model	Un-standardized coefficients		Standardized coefficients	T	Sig.	95.0% Confidence interval for B		Collinearity statistics	
	B	Std. error	Beta			Lower bound	Upper bound	Tolerance	VIF
1 (Constant)	1.642	.424		3.872	.000	.805	2.479		
Factor-1	.171	.084	.183	2.036	.043	.005	.337	.519	1.928
Factor-2	-.233	.093	-.236	-2.520	.013	-.416	-.051	.480	2.081
Factor-3	-.120	.100	-.107	-1.208	.229	-.317	.076	.539	1.856
Factor-4	.055	.085	.054	.645	.520	-.113	.222	.590	1.694
Factor-5	.050	.081	.056	.617	.538	-.110	.211	.505	1.979
Factor-6	.203	.086	.219	2.372	.019	.034	.372	.492	2.032
Factor-7	-.056	.094	-.061	-.601	.549	-.241	.129	.412	2.426
Factor-8	.057	.097	.058	.591	.555	-.134	.249	.429	2.330
Factor-9	.266	.085	.273	3.131	.002	.098	.434	.555	1.803
Factor-10	-.252	.107	-.241	-2.349	.020	-.464	-.040	.399	2.504
Factor-11	.091	.099	.084	.914	.362	-.105	.286	.496	2.017
Factor-12	.206	.081	.211	2.561	.011	.047	.365	.618	1.617
Factor-13	.000	.081	.000	-.004	.997	-.160	.159	.561	1.781
Factor-14	.084	.065	.105	1.290	.199	-.059	.199	.629	1.591

^aDependent variable: Overall professionals' satisfaction.

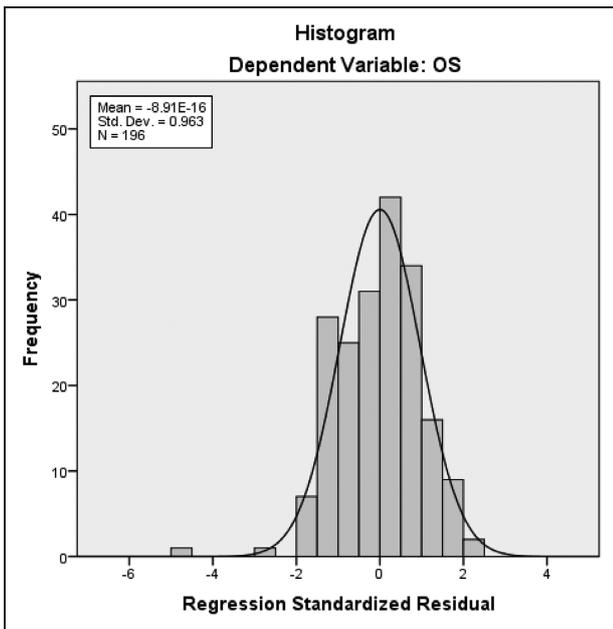


Figure 1. Visual identification of the shape of normal distribution.

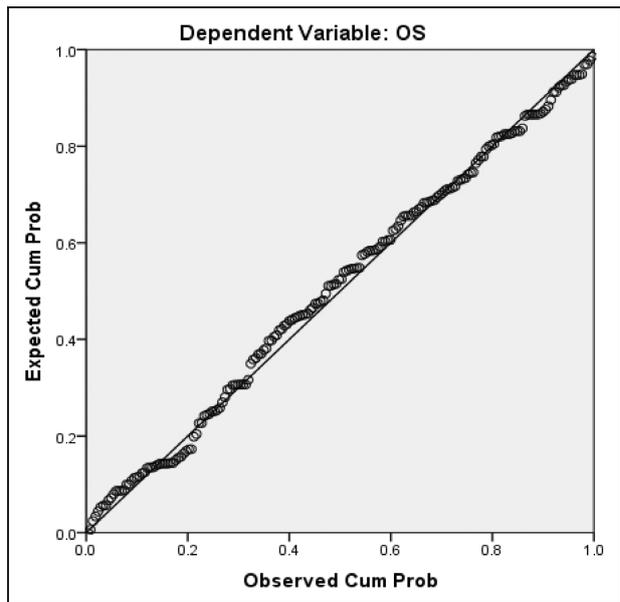


Figure 2. Normal probability plot of the standardized regression residual.

factor analysis. The items loading of the extracted variables were found to be between 0.578 and 0.749 for all factors, indicating that all variables represent respective dimensions successfully. The communalities of variables extracted between 0.517 and 0.721 for 13 out of 14 factors suggested that the variance of most variables is within the acceptable range.

The application of the Cohens' criterion for effect size, the relationship between independent variables

(factors) and dependent variables (satisfaction) was appropriately characterized as moderately strong. The model has a smaller regression sum of squares compared to the residual sum of squares, which means that the model does not account for the majority of the variation in the dependent variable. The histogram and normal probability plot of the standardized residual regression do not recommend any deviation from the assumptions, and the dependent variable is

normally distributed. The residual statistics would be relatively confident that the use of the model would not be severely limited. After the normality of the data is met in the regression model, the multicollinearity is needed to test for determining if there is any similarity between the independent variables in a model. In an appropriate regression model, no correlation between independent variables should occur, or no multicollinearity should happen. The VIF values obtained between 1.591 to 2.504 and it can be concluded that there were no multicollinearity symptoms. However, the consequences of the validity tests support the validity of the study.

Rafiq and Ameen (2009) stated that OSILS adoption in libraries is at infancy level after surveying 370 responses from 48 countries including Pakistan, India, Australia, Canada, USA, and UK. Alam and Islam (2011) showed that the automated systems of Bangladeshi libraries are still at infancy level. Alam (2017: 1) identified that a “lack of OSILS consortium, unwillingness of library professionals, inadequate funding, lack of IT infrastructure, and lack of training & retraining of library professionals” were the significant causes of lower adoption of OSILS in Bangladeshi university libraries. Alam (2018) showed that only 14% of university libraries had adopted OSILS in Bangladesh. Seven public university libraries out of 41 and 14 private university libraries out of 103 (two in 2010, three in 2011, seven in 2012, three in 2013, two in 2014, one in 2015, two in 2016 and one in 2017) automated their libraries using Koha OSILS; but, no university libraries of Bangladesh are using any other OSILS. Among them, 52% of the university libraries did not apply any automation software previously, 33% shifted their proprietary ILS into OSILS, and 14% moved their freeware ILS into OSILS. He also found that the selected university libraries overall were using 59% of Koha modules, and the level of satisfaction showed positive acceptance from the library users and professionals. Khatun and Ahmed (2018) examined the usability of the Koha OPAC of BRACU Library empirically from a user perspective and provided favorable information about the Koha interface and its usability. Marshall Breeding (2017) conducted an international survey on library automation among 4042 libraries from 92 countries and showed that Koha received top marks in the 2016 perceptions survey. Müller (2011) conducted a multidimensional analysis among 20 free and OSILS software and found that Koha was recognized as the most sustainable and mature OSILS. Kiriyanant (2012) found that 59% of Thai university libraries in Bangkok and Pathumthani tended to move towards OSILS adoption although they currently used

proprietary ILS. Among them, 55% thought that they would select Koha when they wanted to change library automation. From the above discussion, it can be said that the OSILS adoption and practices in libraries and information institutions around the world including Bangladesh have gained popularity in recent years due to the sustainability, maturity, efficiency, and usability of Koha.

Conclusion

The purpose of the study is to identify the influential factors for adoption of open source integrated library systems in Bangladeshi university libraries. A structured questionnaire was adapted cautiously as per local arrangements after conducting a pilot survey. The final survey was carried out among 196 library professionals from 14 private and seven public university libraries via the structured questionnaire. The influential factors for the adoption of OSILS were analyzed by multiple regressions where overall satisfaction was used as the dependent variable, and 14 factors were applied as independent variables. The Bartlett's test and Cronbach's Alpha evaluated the reliability of each multiple-factor scale which suggested that the internal consistency of all factors was very satisfactory. Moreover, discriminant validity, item loading, commonalities, factor analysis with varimax rotation, normal probability plot, histogram, KMO, multicollinearity, and VIF values supported the validity of the study. The entire model of regression analysis was established to be significant and recommended that cost-effectiveness, open source code, supporting community, backup and restore systems, easy integration with other software, and freedom from licensing fee significantly influenced library professionals to adopt OSILS in Bangladeshi university libraries. It will help to build consciousness among library professionals and users regarding OSILS. Moreover, an attempt has been made for the first time to evaluate the significant factors for adoption of OSILS in Bangladeshi university libraries. Ideally, this study will prompt future research that assesses the extent to which the adoption of OSILS has been done and the factors that hinder its adoption from the professionals' point of view of non-OSILS.

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References

- Afroz H (2014) Digital Library Initiatives at BRAC University: Successes and Challenges. Oxford: *INASP Publications*. Available at: https://www.inasp.info/sites/default/files/2018-04/digital_library_initiatives_at_brac_university.pdf (accessed 13 February 2019).
- Ahammad N (2014) Implementing the Koha integrated library system at the Independent University, Bangladesh: A practical experience. *The Electronic Library* 32(5): 642–658.
- Alam MJ (2017) Challenges and remedies for adoption of open source integrated library system in the university libraries of Bangladesh. *International Journal of Ethics in Social Sciences* 5(2): 6–30.
- Alam MJ (2018) *Assessing adoption and satisfaction of open source integrated library systems in the university libraries of Bangladesh*. Unpublished MPhil Thesis, Bangladesh University of Professionals, Dhaka.
- Alam MS and Islam MS (2011) Digital library initiatives in Bangladesh: Current status and future challenge. In: *Proceedings of the international seminar on vision 2021: Role of libraries for building digital Bangladesh*, p.3. Dhaka: The Library Association of Bangladesh. Available at: https://www.academia.edu/2556789/Digital_Library_Initiatives_in_Bangladesh_current_Status_and_future_challenges (accessed 20 February 2019).
- Andaleeb SS and Simmonds PL (1998) Explaining user satisfaction with academic libraries: strategic implications. *College and Research Libraries* 59: 156–167.
- Anuradha KT and Sivakaminathan R (2009) Enhancing full text search capability in library automation package: A case study with Koha and Greenstone Digital Library Software. In: *Proceedings of 2009 International Conference on Computer Science and Information Technology*, Singapore, 9–11 October 2009, pp. 232–236.
- Arch X (2011) Ultimate Debate 2010: Open source software – Free beer or free puppy? A Report of the LITA Internet Resources & Services Interest Group Program, American Library Association Annual Conference, Washington, DC, June 2010. *Technical Service Quarterly* 28(2): 186–188.
- Breeding M (2017) Perceptions 2017: An international survey of library automation. Available at: <https://librarytechnology.org/perceptions/2017/> (accessed 15 January 2019).
- Carlock R (2008) Open source integrated library systems. *Nebraska Library Association Quarterly* 39(4): 5–11.
- Chouhan LB (2010) *Open source software (OSS) for library management: A study*. Dissertation, NISCAIR, New Delhi, India.
- Cohen J, Cohen P, West SG, et al. (2003) *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. 3rd edn. Mahwah, NJ: Lawrence Erlbaum.
- Dennison LH and Lewis AF (2011) Small and open source: Decisions and implementation of an open source integrated library system in a small private college. *Georgia Library Quarterly* 48(2): 4.
- Fornell C and Larcker DF (1981) Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1): 39–50.
- Gireesh Kumar TK and Jayapradeep M (2015) Perceptions of LIS professionals on open source integrated library system and adoptability of Koha over LibSys in India. *International Journal of Information Dissemination and Technology* 5(2): 100–105.
- Habib MA (2015) Library and info-centre modernization by applying SliMS and RFID. *Daily Sun*, 2 April.
- Keast D (2011) A survey of Koha in Australian special libraries: Open source brings new opportunities to the outback. *OCLC Systems & Services: International Digital Library Perspectives* 27(1): 23–39.
- Kenwood CA (2001) A Business Case Study of Open Source Software. Project report for the MITRE Corporation, USA. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.630.4588&rep=rep1&type=pdf> (accessed 18 February 2019).
- Khatun A (2014) *Open source integrated library system and usability issues A study of Koha interfaces*. Master's Thesis, Dhaka University, Bangladesh.
- Khatun A and Ahmed SMZ (2018) Usability testing for an open-source integrated library system: A task-based study of the Koha OPAC interface. *The Electronic Library* 36(3): 487–503.
- Kiriyant P (2012) *Survey of Open Source Integrated Library System in Thai University Libraries in Bangkok and Pathumthani*. Kyoto University. Kyoto: The Center for Southeast Asian Studies Library.
- Koha-community (2018) Official Website of Koha Library Software. Available at: <https://koha-community.org/> (accessed 14 October 2018).
- Kohn K and McCloy E (2010) Phased migration to Koha: Our library's experience. *Journal of Web Librarianship* 4(4): 427–434.
- Kumar VV and Abraham T (2009) Eight things you should know about open source integrated library systems. In: *UGC sponsored national conference on open source software in libraries*, Cochin University of Science and Technology, 24–25 November 2009. (Unpublished)
- Kumar VV and Jasimudeen S (2012) Adoption and user perceptions of Koha library management system in India. *Annals of Library and Information Studies* 59: 223–230.
- Mezbah-ul-Islam M (2003) *Measuring effectiveness of university libraries: Case study of Bangladesh*. Unpublished PhD Thesis, North-Eastern Hill University, Shillong, India.
- Michigan State University (2017) Regression analysis. Available at: <https://msu.edu/course/nur/813/regression.htm> (accessed 18 October 2017).
- Minitab.com (2017) What is a variance inflation factor (VIF)? Available at: <http://support.minitab.com/en-us/minitab/17/topic-library/modeling-statistics/regression-and-correlation/model-assumptions/what-is-a-variance-inflation-factor-vif/> (accessed 18 October 2017).

- Müller T (2011) How to choose a free and open source integrated library system. *OCLC Systems & Services: International Digital Library Perspectives* 27(1): 57–78.
- Nadiri M (1970) Diagnosing university students' zone of tolerance from university library services. *Malaysian Journal of Library & Information Science* 15(1):1–21.
- Nunnally JC (1978) *Psychometric Theory*. 2nd edn. New York: McGraw-Hill.
- Omeluzor SU, Adara O, Ezinwayi M, et al. (2012) Implementation of Koha Integrated Library Management Software (ILMS): The Babcock University Experience. *Canadian Social Science* 8(4): 211–221.
- Open Source Initiative (2018) The Open Source Definition (Annotated) | Open Source Initiative. Available at: <https://opensource.org/osd-annotated> (accessed 15 February 2018).
- Poulter A (2010) Open source in libraries: An introduction and overview. *Library Review* 59(9): 655–661.
- Rafiq M and Ameen K (2009) Issues and lessons learned in open source software adoption in Pakistani libraries. *The Electronic Library* 27(4): 601–610.
- Rahman MM (2014) Use of RFID Technology in Integrated Library Management System in Bangladesh: a practical experience. In: *Lecture on RFID and SLiMS*, Southeast University, Banani, Dhaka, Bangladesh, 12 April 2014. Available at: <https://www.researchgate.net/publication/281607320> (accessed 13 February 2018).
- Riewe LM (2008) *Survey of open source integrated library systems*. Master's Thesis, San Jose State University, CA, USA.
- Schierholz R and Laukkanen T (2007) Internet vs mobile banking: Comparing customer value perceptions. *Business Process Management Journal* 13(6): 788–797.
- Silvestre JJR (2010) *An integrated library system on the CERN document server*. Master's Thesis, Universidade de Évora, Portugal. Available at: <https://cds.cern.ch/record/1294486/files/CERN-THESIS-2010-115.pdf> (accessed 12 February 2018).
- Singh V (2013) Experiences of migrating to an open-source integrated library system. *Information Technology and Libraries* 32(1): 36–53.
- Singh V (2014) Expectations versus experiences: Librarians using open source integrated library systems. *The Electronic Library* 32(5): 688–709.
- SLiMSBD (2018) Slims – Senayan Library Management System – Community. Available at: <https://slims.web.id/web/pages/community/> (accessed 15 October 2017).
- Spsstests.com (2015) Multicollinearity Test Example Using SPSS | SPSS Tests. Available at: <http://www.spsstests.com/2015/03/multicollinearity-test-example-using.html> (accessed 18 October 2017).
- Sunil MV and Harinarayana NS (2013) *Open Source Library Automation Software: Features and Capabilities*. Saarbrücken: LAP LAMBERT Academic Publishing.
- UGC (2018) University Grants Commission. Available at: <http://www.ugc.gov.bd/en/home/university/public/120> (accessed 14 October 2017).
- Uzomba EC, Oyebola OJ and Izuchukwu AC (2015) The use and application of open source integrated library system in academic libraries in Nigeria: Koha example. *Library Philosophy and Practice (e-journal)*.

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Information-seeking behaviour of undergraduate students: A developing country perspective

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Abstract

The purpose of this study is to investigate the information-seeking behaviour of the undergraduate students at Dhaka University, Bangladesh. Questionnaires were distributed to the students and data were collected over a period of 60 days between November and December 2017. Of the 450 questionnaires distributed, 339 were returned where the response rate was 75.33%. It was found that most undergraduates needed academic and job-related information. To meet those needs, they often went to the library to study and to prepare for competitive job exams. For doing academic work, they were heavily dependent on the class lectures and they were only slightly satisfied with the library services they get. This study brought out the findings that undergraduates' information skills were poor and they were not aware of the library resources. The outcome of this research would help to develop information resources and services for the undergraduates in developing countries.

Keywords

Bangladesh, developing countries, information needs, information-seeking behaviour, information sources, undergraduate students

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Background of the study

Nowadays, information has become one of the most integral elements in our daily lives. To meet these information needs, the information seeker's searching is continuously driven by many reasons and in many contexts. The invention of the Internet and other technologies has made faster the entire process of information seeking (Singh et al., 2015). It is quite obvious that information-seeking behaviour differs from person to person because of the variation of needs and context of the search. Wilson and Walsh (1996) identified that information-seeking behaviour begins from a fundamental need for information by the user. The information need of the user is a cognitive process which begins with a problem and a demand to solve it. Like other people, undergraduate students need various information and they use different sources

of information. In this context, the university library is a good place to meet the sources of information. Taking Wilson's (1981, 1999) information-seeking model for undergraduate students in a university setting, we stated that information-seeking behaviour stems from a perceived need for information by the student. To meet this need, students go through the information system (e.g. library, OPAC, library website or online database) and other traditional sources of information (e.g. textbook, lecturer, handouts and other resources). In an academic setting, information-seeking behaviour

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of undergraduates revolves around seeking, evaluating, selecting and finally using information mostly for their academic and learning purposes (Singh et al., 2015). Considering their age, gender, disciplines, semesters and other contexts, the need and the information-seeking behaviour of students may differ. Many results brought out the findings that undergraduate students' information-searching skills are poor due to lack of awareness of library resources and services, insufficient training opportunities, the absence of information literacy instruction in universities, poor ability to use the information access tools and use the system, and absence of a well-planned information system that they want (Callinan, 2005; Ferdows and Ahmed, 2015; Joo and Choi, 2015; Maybee, 2006). Thus, for university libraries to remain relevant to undergraduates and to be effective information service providers, fuller understanding of the information-seeking behaviour, needs and use of students becomes a necessity. Understanding the information-seeking behaviours of undergraduate students may better equip faculty, librarians, research supervisors and other service providers to help shape those behaviours by offering appropriate and needed services and instruction. The present study will shed light on the information-seeking behaviour (need, seek, source and use) of the undergraduate students of Dhaka University.

Bangladesh is no longer a least developing country (LDC) and it was recognized as a developing country both economically and socially in March 2018 (United Nations, 2018). The country has been improved notably in health, education and economic sectors. The country's population is more than 160 million and the literacy rate is 72.76% (Bangladesh Bureau of Statistics, 2017). As of August 2018 the total number of universities in Bangladesh is 144, of which 41 are public and 103 are private (University Grants Commission, 2018). Dhaka University is the oldest and largest public university in Bangladesh. Established in 1921, the university now consists of 13 faculties, 83 departments, 12 institutes, 20 residential halls, 3 hostels and more than 56 research centres. The number of students and teachers has risen to about 37,018 and 1992 respectively. Presently the university enrolls more than 5800 students, on the basis of merit, in the first year Honours programme (undergraduates) in different departments of the faculties and the institutes (Dhaka University, 2018). Being the oldest university library in Bangladesh, Dhaka University Library (DUL) holds 30,000 handwritten manuscripts, more than 650,000 printed books and bound volumes of journals. Moreover, DUL subscribes to e-journals and other online resources through the UGC Digital Library (UDL).

The DUL subscribes to e-books from 16 publishers. Earlier the university library offered the donor-sponsored service INASP-PERI and UN-supported Research4Life programmes OARE, HINARI, AGORA and ARDI. But now the library does not provide access to either INASP or UN-supported Research4Life resources. Users get off-campus access to e-resources and the library offers OPAC and institutional repository services to the user communities.

Theoretical lens

In order to get a certain piece of information, users follow some approaches which are referred to as information-seeking behaviour. The information-seeking behaviour model addresses the guidelines for designing effective strategies for improving information seeking. It is widely discussed that information-seeking behaviour studies facilitate the building of models of information behaviour which show how different factors or variables influence information seeking (Talja et al., 1999). There has been a proliferation of information-seeking models and theories, each incorporating different viewpoints, concepts and terminology. Different researchers have identified these steps of users in their own way and arranged them in a framework to formulate various information-seeking behaviour models. Many models of information seeking exist, but for this study we have focused on some leading models discussed by Case and Given (2016) in their books. They reviewed different models identified by different researchers, implemented and validated in real-world settings. Figure 1 summarizes the components of those models identified by Wilson (1997), Krikelas (1983), Ellis (2005), Kuhlthau (1994) and Dervin's sense-making model (1983).

These models have been developed to date to address users' information behaviour from different perspectives. For example, Wilson's (1997) model is more dedicated to information-seeking and -searching behaviour of the users where as Kuhlthau's (1994) information search process (ISP) model focuses on the affective and cognitive aspects of the information search process. After examining some of these models, it is evident that some models seem different but also have an overlapping or similar approach to information-seeking behaviour models. These include the identification of information needs, use of information, determining to use the information sources, barriers of information seeking and contextualizing information to use. For the present study, we have focused on the discussed elements and designed the

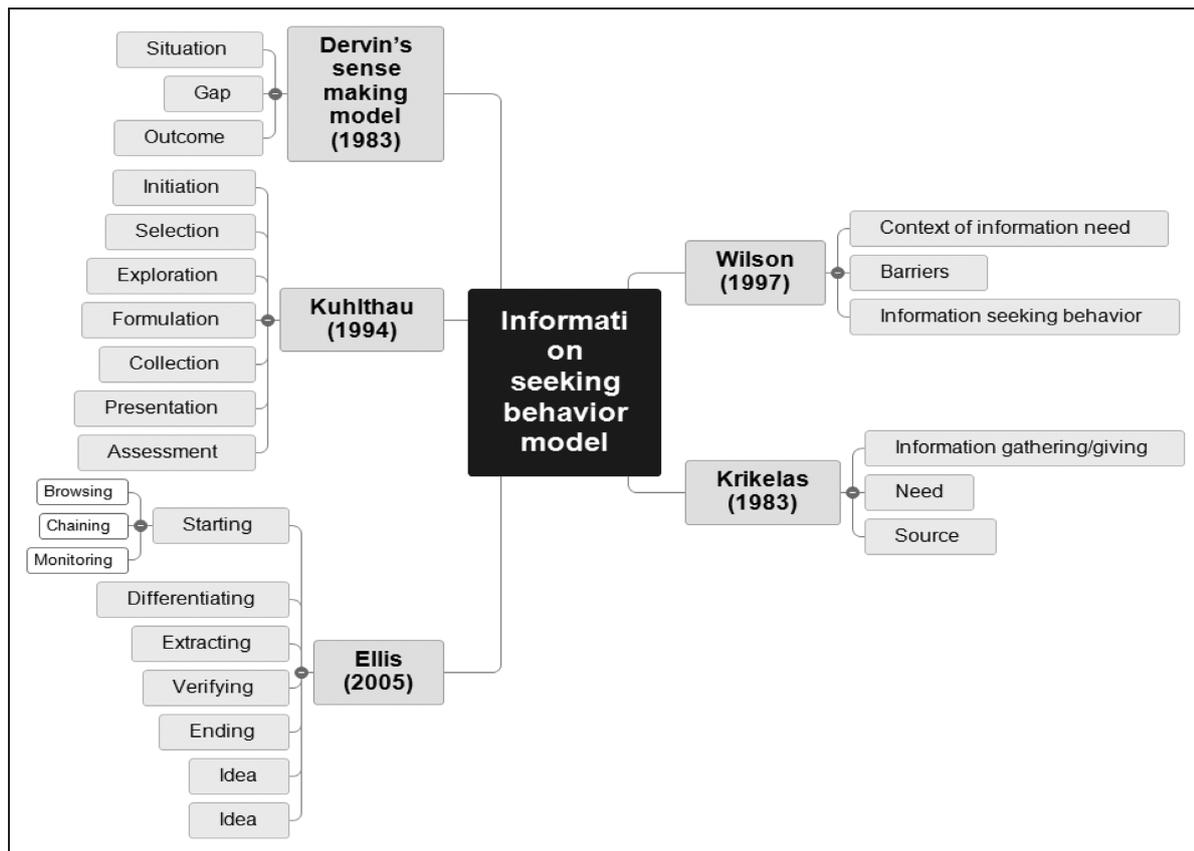


Figure 1. Information-seeking behaviour models (compiled by authors).

questionnaire to examine the elements from the viewpoint of a developing country. We adopt these phases (i.e. need, search, use, source, barriers of information-seeking model) for mapping the present study by focusing on the undergraduate students' needs, what do they do with these needs and where they go to meet those needs.

Objectives of the study

The objective of this study is to understand how the undergraduate students at Dhaka university perceive their own information-seeking need and behaviour. We have categorized the primary objectives under the two terms 'information need' and 'information-seeking behaviour'. Firstly, under information need we have broadly focused on what kind of information they need and secondly, what they do to meet those information needs. To address these objectives, we have come up with the following research questions:

RQ1. What are the information needs of undergraduate students?

RQ2. How do they meet their information needs?

RQ3. Which sources do they prefer for academic work?

RQ4. What are the difficulties they face when seeking information?

RQ5. Are there any significant differences among the student groups in terms of their gender on information need, seeking, ability to use sources?

Literature review

Information seeking focuses on the activities where information is found to fulfil the information needs of users in their daily activities (Case, 2007). The study of information-seeking behaviour can be dated back to the late 1940s. Since that time a large number of studies have been carried out on the various aspects of information-seeking behaviour in social sciences, humanities, and science and technology (Singh and Satija, 2007). Studying information-seeking behaviour has many objectives which help to investigate needs and information-seeking practices of different user groups (Urquhart et al., 2003). Many research studies have been carried out to examine the information needs and behaviour of different library user groups.

These widely discussed the academics', researchers', graduate students' and undergraduates' information-seeking behaviour and some other studies also distinguish between these groups on the basis of their need.

From the literature review, we found that there have been some empirical studies investigating the information-seeking behaviour of students, only a few of which are related to the present study. Abdoulaye (2002) investigated the information-seeking behaviour of African students at the International Islamic University Malaysia (IIUM) library and found that learning to use the library of IIUM changed their information-seeking behaviour. Hiller (2002) conducted a study in the University of Washington and revealed that undergraduates preferred to visit the library to study rather than to seek journals or books. Kakai et al. (2004) identified that preparing assignments and course work are the tasks that lead undergraduate students into seeking for information. Callinan (2005) investigated the information-seeking behaviour of undergraduate students and found that there are differences in the extent to which sources of information are used by students in different years of their studies. It was also found that lack of awareness is the primary reason why undergraduate Biology students did not use the library's electronic databases. Ajiboye and Tella (2007) examined the information-seeking behaviour of undergraduate students and found that most of the students looked for academic information and job-related information. Korobili et al. (2011) found that the majority of the students demonstrated a low to medium level of information-seeking behaviour. This survey revealed the need for improving the level of graduate students' information literacy skills. Bøyum and Aabø (2015) interviewed Business PhD students and found that they used library databases more than Google. They preferred to search for formal information from the library databases. Joo and Choi (2015) examined the multiple factors like usefulness and ease-of-use, resource quality and individual differences that affect the online library resource selection by undergraduate students. They found that both usefulness and ease-of-use positively influenced the undergraduates' intention to use online library resources. Conducting a small-scale pilot study on information-seeking behaviour in the digital environment between Information Science and non-information science students, Furi and Balog (2016) found that non-information science students' performance was better than the Information Science students' in searching their needed information. Tanacković et al. (2017) investigated the information needs and information-seeking behaviour of public library users in an EU acceding country. It was found

that EU-related information was required more by the public library users and a majority of respondents preferred readily available sources (Internet, TV/radio) to access EU information. Many studies have been conducted on information-seeking behaviour in the field of Library and Information Science. Research on the information-seeking behaviour of undergraduates in developing countries like Bangladesh is still limited and there is a need to understand their information use patterns by using a quantitative approach. Islam and Tsuji (2010) assessed the information skills of undergraduate students of Information Science and Library Management (ISLM) at Dhaka University, Bangladesh. They found that students had limited information skills, as they are not discussed extensively in their academic course curriculum. Shoeb (2011) investigated the information skills of undergraduate Business students at the Independent University, Bangladesh (IUB). It was found that students needed more efficiency to resolve their information-related problems. Sarkhel and Khan (2014) revealed the information-seeking behaviour of the faculty members of the Agricultural University in Bangladesh. They found that faculty members looked for information for their career development and keeping them up to date. Ferdows and Ahmed (2015) investigated the information skills (e.g. Boolean operators, truncation and others) among undergraduate students at Dhaka University and found that undergraduates' information skills were poor. They also noted that absence of information literacy instruction within the university, lack of online information resources, and inadequate information and communication technology facilities were the areas where the undergraduates were suffering. Hossain et al. (2017) examined the information needs and information-seeking behaviour of Members of Parliament (MPs) in Bangladesh and found that MPs generally looked for information to ask parliamentary questions and inform investigations, to create a speech and to make a decision. The majority of the MPs were not conscious of the information services which were provided by the parliament library. Though we have largely focused on the students' information need and seeking behaviour in Bangladesh, we have partly focused on some other studies which we thought might be useful for this study. By taking some empirical evidence from other studies, we intended to understand the other community's information needs in Bangladesh. However, while there have been studies on information literacy and undergraduate students (Islam and Tsuji, 2010); information skills among the undergraduates in both public and private universities (e.g. Ferdows and Ahmed,

Table 1. Items included in the questionnaire.

Item	Question	Source
Q.1	Demographic information	Self-developed
Q.2	Which of the following information topics do you often need?	Self-developed
Q.3	Where do you often find the needed information?	Self-developed
Q.4	How often do you visit the library?	Adapted from Singh and Khanchandani (2015)
Q.5	Which search engine do you use frequently?	Self-developed
Q.6	Why do you visit the library?	Self-developed
Q.7	How much the library meets your information need?	Self-developed
Q.8	If you fail to get information the first time, then what do you do?	Self-developed
Q.9	What type of information sources do you prefer?	Adapted from Ge (2010)
Q.10	If you choose electronic, please identify the sources you often use (Multiple choices). (If you choose Printed, please ignore question number 10.)	Self-developed
Q.11	Which sources do you use the most for your academic work?	Self-developed
Q.12	How often do you use the Internet?	Self-developed
Q.13	Where do you get access to the Internet?	Self-developed
Q.14	What types of search strategies do you employ?	Self-developed
Q.15	Are you satisfied with the library services?	Adapted from Safahieh (2007)
Q.16	How do you rate your ability to use the following information sources?	Adapted from Ge (2010)
Q.17	Do you face difficulties in information seeking?	Self-developed
Q.18	If you face difficulties, please identify the barriers.	Adapted from Marouf and Anwar (2010)

2015; Shoeb, 2011), information-seeking behaviour of faculty members and MPs (e.g. Hossain et al., 2017; Sarkhel and Khan, 2014), the extant literature is yet to provide empirical evidence of information need and information-seeking behaviour of undergraduate students in Bangladesh. This present study attempts to explore the information need and information-seeking behaviour of the undergraduate students of Dhaka University in Bangladesh. We assume that the findings of this study will fill the research gap.

Methodology

We reviewed a substantial amount of literature on the information-seeking behaviour of undergraduate students. For reaching a wide pool of undergraduates, we depended on the survey questionnaire method for this study.

Study population and sample

Undergraduate students at Dhaka University are the target population for this study. It was found from different studies that undergraduates always have an information need for meeting their academic demands, e.g. preparing assignments, class notes, class lectures, research reports and other aligned works. Considering the larger population, we had to

use convenience sampling as it would be difficult to obtain a sampling frame consisting of all undergraduate students at Dhaka University.

Instrument development

The items developed for the questionnaire and the demographic variables are listed in Table 1. The present study did not examine any specific model of information-seeking behaviour, rather it has examined the overlapping or common areas of those models. Some of the survey items were taken from the existing models of information-seeking behaviour and some of these are taken from the existing literature. Survey items were chosen from previous studies or modified to suit the needs of the study. The questionnaire used open- and closed-ended questions with a 5-point Likert Scale (1=never, 5=always) and (1=very good, 5=very bad).

Data collection and analysis

The survey question was pre-tested to check for any question wording issue. After talking and discussing with the respondents, minor changes were made based on suggestions. Considering the undergraduate level, questions were developed with simple and known words. The final questionnaire was distributed to the undergraduate students at Dhaka University Library

as well as different residential halls of the university where the students live. DUL is the common place where most of the students spend time studying. During the study time, we distributed the questionnaire and asked them to leave the questionnaire after filling it up. Later, we collected the filled-up questionnaire. Similarly, we distributed some questionnaires to the selected student dormitory and asked them to fill it up. The questionnaire consisted of three pages with open and closed-ended questions, and students' demographic information such as age, gender, semester and type of programme. The data collection periods were two months between November and December 2017. No personal information such as name, email address and others were collected because of the privacy of the respondents. A total of 450 printed questionnaires were distributed among the undergraduate students. Out of 450 questionnaires, 339 (75.33%) completed questionnaires were returned. The collected data were analysed using the Statistical Package for the Social Sciences (SPSS) version 24. We used a number of tools and tests for this study. We used a cross-tabulation tool to examine relationships within the data that might not be readily apparent when analysing total survey responses. In addition, we used weighted means which helps with decisions where some things are more important than others. In some areas descriptive statistics were done to get the frequency of the questions asked. Finally, we used a non-parametric test e.g. the Mann-Whitney U test and Pearson's Chi-square to examine the students' demographic variables and their information need and seeking.

Results

Demographics

Table 2 shows the demographic distribution of the survey respondents. The largest numbers of respondents (27.10%) were from the faculty of Arts. On the other hand, the lowest response (0.60%) came from the faculty of Earth and Environment Science. Among the participants, the largest groups of students were from the second semester (25.60%) and the largest groups of students (62.40%) came from the 19–21 age group. Among the respondents, a greater number of respondents was male (51.30%) than female (48.70%).

Academic and demographic information of participants (cross tabulation)

For the present study, we used the cross tabulations to present the results of the entire group of respondents.

It examines the relationships within the data that might not be readily apparent when analysing total survey responses. Among the students, the largest group, 212 (62.50%), was from the 19–21 age group where there were more female respondents than male. Understanding gender differences is crucial for explaining the phenomena in a particular context. For the present study, gender analysis provides us with specific data on the information need and seeking behaviour of male and female, as well as their relations. It uncovers how gender relations affect information need, behaviour and using sources of information. The next largest group 77 (22.70%) was from the 22–24 age group, followed by those from the 16–18 age group 45 (13.30%). Only 5 (1.50%) students were from the 25–27 age group (Table 3).

As shown in Table 4, more male students (26.80%) were taking the course work programme while more female (21.50%) took the course work with research monograph.

As shown in Table 5, the largest numbers of undergraduate students both male (27.40%) and female (29.80%) stay in the student dormitory. It is obvious because finding a private residence or mess is quite challenging in Dhaka city. Students always prefer to stay at a student dormitory rather than a privately rented house.

Information needs of the undergraduate students

In an attempt to understand the need for information, undergraduate students were asked what information they often need. Table 6 reveals the information needs of the undergraduates. It was quite obvious that most of the undergraduates needed academic semester information (68.40%) for their semester work. Here academic semester refers to all information related to academic activities, i.e. semester schedule, midterms, exams, assignments, report writing, internship and class activities. As undergraduates, it is obvious that they often needed these types of information. The second highest number of respondents (55.20%) needed job-related information which is very significant in the perspective of Bangladesh. Very few students (7.40%) needed all the information that was listed in the questionnaire. It is interesting to note that a good number of undergraduates (33%) needed political information. It is obvious that Dhaka University has a glorious past and substantially contributed to the emerging of Bangladesh. Dhaka university students have a proud history of struggle and supreme sacrifice for the national cause. It might be the reason that DU undergraduates are interested in politics and need political information.

Table 2. Demographics information of undergraduates (N=339).

Variable	Faculty name	Frequency	%
Faculty name	Faculty of Arts	92	27.10
	Faculty of Business Studies	72	21.20
	Faculty of Biological Science	24	7.10
	Faculty of Earth and Envir. Sciences	2	0.60
	Faculty of Engineering and Technology	19	5.60
	Faculty of Fine Art	3	0.90
	Faculty of Law	4	1.20
	Faculty of Sciences	38	11.20
	Faculty of Social Sciences	73	21.50
	Institutes	12	3.50
Semester	2nd semester	87	25.60
	3rd semester	72	21.50
	4th semester	60	17.60
	5th semester	2	0.60
	6th semester	28	8.20
	7th semester	2	0.60
	8th semester	28	8.20
	Did not answer (missing)	90	26.50
Type of programme	Only course work	164	48.20
	Course work and research monograph	44	12.90
	Course work and report writing	25	7.40
	Others	1	0.30
	All of these	54	15.90
	Did not answer (missing)	51	15.00
Gender	Male	171	51.30
	Female	168	48.70
Age (Year)	Less than 16	0	0
	16–18	45	13.20
	19–21	212	62.40
	22–24	77	22.60
	25–27	5	1.50
	More than 27	0	0
Student residence	Student dormitory	194	57.10
	Stay at residence	114	33.50
	Rent house/Mess	31	9.10

Table 3. Respondents: Age group and gender (N=339).

Age group	Male	%	Female	%	Total	%
16–18	17	5.00	28	8.30	45	13.30
19–21	99	29.20	113	33.30	212	62.50
22–24	50	14.70	27	8.00	77	22.70
25–27	5	1.50	0	0.00	5	1.50
Total	171	50.40	168	49.60	339	100

Information sources used by the undergraduates

Undergraduates use a variety of sources to satisfy their needs, consider certain sources more important than others and use these with varying frequencies. To

Table 4. Respondents: Type of programme and gender (N=288, missing-51).

Type of programme	Male	%	Female	%	Total	%
Only course work	91	26.80	73	21.50	164	48.30
Course work and research monograph	14	4.10	30	8.80	44	12.90
Course work and report writing	14	4.10	11	3.20	25	7.30
Others	0	0.00	1	0.30	1	0.30
All of these	26	7.70	28	8.30	54	16.00
Total	145	42.70	143	42.10	288	85.00

Table 5. Respondents: Residence and gender (N=339).

Residence	Male	%	Female	%	Total	%
Student dormitory	93	27.40	101	29.80	194	57.20
Stay at residence	60	17.70	54	15.90	114	33.60
Rent house/ Mess	18	5.30	13	3.80	31	9.10
Total	171	50.40	168	49.60	339	100.00

meet the information need, students were asked where they often find the needed information. Table 7 lists the sources of information where they met their information need. The largest group (71.40%) used social media which is followed by discussion with friends (61.40%). The next largest group used a newspaper (57.80%) to meet their information need and that is followed by a website (54.90%). It is interesting to know that students prefer to have discussion with their friends for their academic activities in the semester.

Table 6. Respondents: Information needs of the respondents and gender (N=339, multiple response).

Information needs	Male	%	Female	%	Total	%
Academic semester	126	37.20	106	31.30	232	68.40
News	99	29.20	85	25.10	184	54.30
Course related	100	29.50	84	24.80	184	54.30
Business	55	16.20	25	7.40	80	23.60
Job related	88	26.00	99	29.20	187	55.20
Sports	60	17.70	43	12.70	103	30.40
Entertainment	78	23.00	75	22.10	153	45.10
Health	38	11.20	58	17.10	96	28.30
Higher education	58	17.10	72	21.20	130	38.30
Politics	64	18.90	48	14.20	112	33.00
Literature	43	12.70	49	14.50	92	27.10
Science and Technology	52	15.30	61	18.00	113	33.30
Arts and Literature	48	14.20	50	14.70	98	28.90
Economics	51	15.00	25	7.40	76	22.40
Daily life	48	14.20	51	15.00	99	29.20
Preparing assignment	47	13.90	42	12.40	89	26.30
Research	30	8.80	38	11.20	68	20.10
Immigration	12	3.50	13	3.80	25	7.40
General knowledge	77	22.70	74	21.80	151	44.50
Family	44	13.00	37	10.90	81	23.90
All of these	10	2.90	15	4.40	25	7.40
Others	2	0.60	0	0.00	2	0.60

Table 7. Respondents: Information need and gender (N=339, multiple response).

Information sources use	Male	%	Female	%	Total	%
Library	89	26.30	88	26.00	177	52.20
Social media	123	36.30	119	35.10	242	71.40
Discuss with friends	110	32.40	98	28.90	208	61.40
Notice board	66	19.50	57	16.90	123	36.40
Website	101	29.80	85	25.10	186	54.90
Seminar	55	16.20	43	12.70	98	28.90
Discuss with faculty	45	13.30	52	15.30	97	28.60
Using search engine	45	13.30	48	14.20	93	27.40
Group discussion	59	17.50	47	13.90	106	31.40
Newspaper	97	28.60	99	29.20	196	57.80
Discuss with family	31	9.10	28	8.30	59	17.40
Journals	29	8.60	38	11.20	67	19.80
Cyber cafes	5	1.50	16	4.70	21	6.20
Lectures	41	12.10	43	12.70	84	24.80
Radio	19	5.60	10	2.90	29	8.60
TV	51	15.00	36	10.60	87	25.70

Table 8. Respondents: Library visits undergraduate students and gender (N=339, missing 7).

Frequency (Library visit)	Male	%	Female	%	Total	%
Almost daily	20	6.00	13	3.90	33	9.90
Once in a week	50	15.10	35	10.50	85	25.60
Twice in a week	25	7.50	22	6.60	47	14.20
Several times in a week	30	9.00	24	7.20	54	16.30
Once in a month	17	5.10	28	8.40	45	13.60
Twice in a month	7	2.10	8	2.40	15	4.50
Several times in a month	11	3.30	23	6.90	34	10.20
Never	6	1.80	10	3.00	16	4.80
Others	2	0.60	1	0.30	3	0.90
Total	168	50.50	164	49.20	332	100.00

Table 9. Respondents: Library visit and gender (N=339, multiple response).

Reasons for visiting library	Male	%	Female	%	Total	%
To study	131	38.60	129	38.10	260	76.70
Reading job-related book	62	18.30	60	17.70	122	36.00
To borrow books	49	14.50	57	16.90	106	31.40
A quiet place to read	50	14.70	55	16.20	105	31.00
Browsing shelves	18	5.30	14	4.10	32	9.40
Reference	16	4.70	30	8.80	46	13.60
To use the computers	35	10.30	25	7.40	60	17.70
OPAC	17	5.00	18	5.30	35	10.30
Reprography service	3	0.90	6	1.80	9	2.70
To read newspapers	78	23.00	63	18.60	141	41.60
To use the Internet	22	6.50	41	12.10	63	18.60
For research	9	2.70	19	5.60	28	8.30
To access to online journals	12	3.50	17	5.00	29	8.60
Attending seminar	6	1.80	4	1.20	10	2.90
To read magazines	14	4.10	10	2.90	24	7.10
Others	2	0.60	5	1.50	7	2.10

Library visit

Students were asked to indicate the frequency of visiting the library (Table 8). The data reveals that the largest group of students (25.60%) visit the library once a week. The next largest group (16.30%) stated that they visited the library several times in a week. The data indicated that only a few respondents (4.80%) did not visit the library.

Reasons for visiting the library

As shown in Table 9, the largest group (76.70%) of undergraduate students visit the library for study purposes. The next largest group (41.60%) visit the library for reading newspapers which is followed by reading job-related books (36.00%). These are very significant findings as DU students can wait many days for reading room places. There are severe shortages of reading rooms for the students and, therefore, they prefer the library for studying. Moreover,

DUL offers newspaper services for all the students where almost all the national dailies are kept for reading.

Preferred sources of information

What format do the respondents of this study prefer when they are asked to choose only one between printed, digital or both? Their responses are presented in Table 10. Table 10 reveals the frequency of the use of printed sources is lower than the electronic sources. But the largest number of students (39.50%) preferred both printed and electronic sources.

Preferred format of E-resources

To know which e-resources they often use, a list of e-resources was included in the questionnaire. Table 11 shows the e-resources lists and it was found that most of the undergraduates (44.80%) preferred e-books which was followed by social media (42.80%). The

Table 10. Students: Information sources and gender (N=339).

Preferred sources	Male	%	Female	%	Total	%
Printed	43	12.70%	53	15.60%	96	28.30%
Electronic	63	18.60%	46	13.60%	109	32.20%
Both of these sources	65	19.20%	69	20.40%	134	39.50%
Total	171	50.40%	168	49.60%	339	100.00%

Table 11. Respondents: Electronic information sources and gender (N=339).

Preferred e-resources	Male	%	Female	%	Total	%
E-journal	54	15.90%	38	11.20%	92	27.10%
E-Book	78	23.00%	74	21.80%	152	44.80%
E-resources	27	8.00%	32	9.40%	59	17.40%
E-mail	57	16.80%	65	19.20%	122	36.00%
OPAC	9	2.70%	9	2.70%	18	5.30%
Portable comp. databases	4	1.20%	3	0.90%	7	2.10%
Radio	6	1.80%	6	1.80%	12	3.50%
Web, e.g. Google	67	19.80%	59	17.40%	126	37.20%
Social media	72	21.20%	73	21.50%	145	42.80%
Online databases	29	8.60%	19	5.60%	48	14.20%
CD ROM	5	1.50%	2	0.60%	7	2.10%
Portals	17	5.00%	8	2.40%	25	7.40%
Television	33	9.70%	22	6.50%	55	16.20%
All of these	8	2.40%	15	4.40%	23	6.80%
Others	1	0.30%	0	0.00%	1	0.30%

Table 12. Respondents: Gender and satisfaction with library services (N=339, missing 8).

Satisfaction with library services	Male	%	Female	%	Total	%
Very dissatisfied	7	2.10%	9	2.70%	16	4.80%
Moderately dissatisfied	33	10.00%	17	5.10%	50	15.10%
Slightly dissatisfied	22	6.60%	18	5.40%	40	12.10%
Neutral	26	7.90%	38	11.50%	64	19.30%
Slightly satisfied	33	10.00%	39	11.80%	72	21.80%
Moderately satisfied	32	9.70%	22	6.60%	54	16.30%
Very satisfied	15	4.50%	20	6.00%	35	10.60%
Total	168	50.80%	163	49.10%	331	100.00%

next largest group (37.20%) preferred to use a search engine, e.g. Google. However, a good number of students preferred to use email and e-journals.

Satisfaction with library services

We found that undergraduates visit the library for many reasons and most of the students do not visit the university library frequently. Respondents were asked how satisfied they were with the DUL services (Table 12). The largest numbers of students (21.80%) were slightly satisfied. The next largest groups (19.30%) were neutral and it was followed by moderately satisfied (15.10%). The lowest numbers of

students (4.80%) were very dissatisfied and a good number of students (10.60%) were very satisfied.

Academic work and sources

Undergraduate students often need to use many sources for their academic activities. To identify the information sources available and used for academic activities, students were asked which sources they used more. Table 13 listed the major sources that students use. Like other information seekers, students used various documentary, non-documentary and electronic sources for obtaining their information. It was found that students were heavily dependent on

Table 13. Respondents: Sources used for academic work (N=339).

Sources used for academic work	Std. Deviation	Weighted Mean	Rank
Class lectures	.947	4.32	1
Textbooks	.994	4.16	2
Social media	1.222	3.90	3
Friends	1.037	3.89	4
Search engine	1.077	3.85	5
Lecturer's handouts	1.202	3.72	6
Group discussion	1.004	3.67	7
Others	1.751	3.67	8
Faculty members	1.105	3.29	9
Library books	1.343	3.25	10
Online forum	1.297	3.12	11
E-resources (database)	1.253	3.04	12
Attending seminar	1.098	2.96	13
Dissertation	1.305	2.87	14
Browsing shelves for books	1.397	2.73	15
Journal articles	1.103	2.58	16
Reference Librarian	1.330	2.51	17
Library card catalogue	1.152	2.41	18
Library OPAC	1.091	2.31	19
Thesis Supervisor	1.378	2.31	20
Subject Librarian	1.336	2.25	21
Abstracts and indexes	1.228	2.20	22

(1= Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Always)

Table 14. Respondents: Ability to use information sources (N=339).

Ability to use sources	Std. Deviation	Weighted Mean	Rank
Library catalogue	1.083	2.74	1
OPAC	1.213	2.71	2
Abstract and Index	1.045	2.58	3
Bibliography	1.028	2.18	4
Google Scholar	1.104	1.99	5
Online databases	1.001	1.94	6
Encyclopedia	.874	1.86	7
Dictionary	.807	1.61	8
Google	1.027	1.51	9

class lectures (weighted mean 4.32), followed by textbooks (weighted mean 4.16) and social media (weighted mean 3.90).

Ability to use the information sources

Undergraduate students, by the very nature of their status, have to regularly study and use information sources for academic activities. The data presented in Table 14 give an indication of their ability to use the information sources. Students were asked to rate

Table 15. Information-seeking obstacles (N=339 – multiple response).

Difficulties of information seeking	Frequency	%
Lack of knowledge to use OPAC	120	35.3
Slowness in downloading information from internet	123	36.2
Difficulty in accessing electronic resources	110	32.4
Lack of awareness of various electronic databases	108	31.8
Inability to locate materials	89	26.2
Difficulty with locating articles in journals	65	19.1
Inadequacy of library resources	64	18.8
Lack of time	103	30.3
Too much information to deal with	82	24.1
Inadequacy of library resources	49	14.4
Less number of copies of books/reading materials	125	36.8
Inability to deal with information overload	35	10.3
Lack of ICT knowledge	132	38.8
Lack of knowledge in search strategies	102	30.0
Shyness in asking for assistance	50	14.7
Limited knowledge on the use of keywords	85	25.0
Inability to seek, to obtain, and to evaluate information	75	22.1
Inadequate knowledge about using the computer	73	21.5
Inadequate knowledge about library system	71	20.9
Others	7	2.1

their ability in using these sources listed in Table 14. Using information sources is considered important for all academic activities. A larger majority of the undergraduate students are good at using the library catalogue (weighted mean 2.74) and it was followed by OPAC (weighted mean 2.71) and using abstract and index (weighted mean 2.58).

Difficulties of information seeking

The undergraduates, as all other students or researchers do, face a number of problems in their information-seeking activities. The participants were asked to indicate the obstacles/problems that they generally faced while searching for information to meet their needs. Their responses are presented in Table 15.

The top-ranking problem mentioned by a majority (38.8%) of the undergraduate students is the lack of ICT knowledge and it is followed by inadequate number of copies of books or other reading materials (36.8%). A majority (36.2%) of the students complain

about the slow Internet speed which is no surprise in Bangladesh. It is very frustrating that a good number of students (35.3%) lack knowledge of how to use the library OPAC. It is very disappointing because the library OPAC is the showcase where students could find the academic resources and excel at their academic activities. The following largest groups stated that they do not have the expertise to access electronic resources, lack awareness of how to use electronic database and do not have the knowledge to design a search query.

Nonparametric test and information-seeking behaviour of undergraduate students

To address the research questions, descriptive statistics were obtained to examine students' demographic and academic data in relation to their information need and use. Due to the ordinal nature of some data obtained through a 5-point Likert-type scale (from 1 being the never/very bad to 5 being the always/very good) on information need and seeking behaviour, nonparametric analyses e.g. Mann-Whitney (M-W) U was performed to compare the difference between students' demographic variables and their information need and seeking. For the questions, Which sources do you use most for your academic work? How do you rate your ability to use the information sources?, we used the 5-point Likert scale (1=never to 5=always) (1=very good to 5=very bad). A Mann-Whitney U test was run to see the differences between male and female students in terms of their using information sources for their academic work and their ability to use these sources. The results of the test show that there is no significant difference in relation to gender and information sources for the academic work of the undergraduate students except for the sources of 'library card catalogue' ($U\ 4834.500\ W\ 10939.500\ Z\ -2.356\ Asymp.Sig.\ .018$) and 'Library OPAC' ($U\ 4221.500\ W\ 9072.500\ Z\ -1.973\ Asymp.Sig.\ .048$) (Significant at $p < 0.05$). A Mann-Whitney U test was also run to see the differences between male and female students in terms of their ability to use the information sources. The results of the test show that there is no significant difference in relation to gender and their ability to use the information sources.

We had also used Pearson's Chi-square test to analyse categorical data. It is also referred to as the goodness of fit statistic because it measures how well the observed distribution of data fits with the distribution that is expected if the variables are independent. A Chi-square test was conducted to see the relationship

between gender and their information needs. The test results suggest that there are significant relationships between gender and some of the information needs. For the sake of simplicity, we will only concern ourselves with the Pearson *Chi-Square* (χ^2), *df* and the *significant level* column. Some of the significant data are $\chi^2=4.399$, $df=1$, $p=.036$ (academic semester); $\chi^2=14.039$, $df=1$, $p=.000$ (business); $\chi^2=6.318$, $df=1$, $p=.012$ (health); $\chi^2=10.880$, $df=1$, $p=.001$ (economics). To see the relationship between gender and the reason for a library visit, we found that there was a significant relationship such as $\chi^2=5.221$, $df=1$, $p=.022$ (reference service); $\chi^2=7.458$, $df=1$, $p=.006$ (using Internet); $\chi^2=4.089$, $df=1$, $p=.043$ (doing research). For all data the significant value is $p < 0.05$. It is important to note that academic semester includes all information related to student affairs, financial aid or part-time job and academic support services which is different from course-related information.

Discussion

For the present study, we set a few research questions and addressed those research questions by a survey questionnaire. The present study has explored the information-seeking behaviour of the undergraduate students at Dhaka University which was underlying the information needs and the sources they used to meet those needs. The responses brought forth a rich set of findings, which are limited by the size of the sample and representatives from different departments and faculty. It is evident from the findings that undergraduate students largely needed the academic semester information for completing their semesters. This finding is very relevant because in the semester system usually the students get limited time to do other extracurricular activities. They are busy with their class, midterm, tutorial, presentation, and so on. The second largest groups of the students need job-related information. The finding is very significant in the perspective of Bangladesh as the graduate unemployment problem in Bangladesh is high. It is in line with Asadullah's (2014) report where it is noted that the graduate unemployment rate in Bangladesh is 47%. It is very significant that compared to other sources, social media is completely ahead in meeting the information needs of the undergraduates. It is in line with the Bicen et al. (2015) and Mahadi et al.'s (2016) study where they showed that the use of social media by the undergraduate students is increasing. It enables the formation of a social network with new people. They are even using social media to learn a foreign language. Apart from that a majority of the

undergraduate students discuss with their friends, read newspapers, browse websites and visit the library to meet their information needs.

It is important to note that undergraduates do not visit the library frequently but the largest numbers of respondents are only slightly satisfied with the services they get. Most of the students visit the library for study purposes, to prepare for either academic or job recruitment exams. Dhaka University has shortages of study space in the library as well as the student dormitory. To ensure a seat in the reading room at DU library, students stand in long queues outside the library even before it opens. It is identified from the observation that most of the students are actually concerned to ensure a place for studying for either academic or job recruitment tests. The results obtained support the findings cited in other studies (Wei, 1995; Whitmire, 2001) that undergraduate students primarily use the library as a place to study. A good number of final year students spent time on browsing and reading newspapers compared to first year students. Reading newspapers is one of the important reasons to visit the library because a newspaper circulates the news of jobs and informs students about current national and international affairs. It is evident from the findings that the undergraduate students at Dhaka University were largely unaware of the various information sources, resources and services offered by the university library. Not many students talked about the e-resources, e-journals, OPAC and other online databases. It is in line with Ferdows and Ahmed's (2015) study where they found that undergraduate students of Dhaka University either lack knowledge or have poor information skills and competencies. However, they are aware of the importance of the library resources needed by them and clearly show that the library does not adequately meet their needs.

It was found that a higher percentage of undergraduates lacked ICT and OPAC knowledge, were unaware of e-resources and lacked knowledge of search strategies. Other institutional barriers like lack of reading materials and slow Internet speed were also found. We assume that undergraduate students in developing countries always lack knowledge of ICT, information search, using e-resources and effective use of digital libraries. Ahmed (2014) identified that university students in Bangladesh have limited access to computers and they have limited facilities to enjoy the other ICT services. The author suggested that offering public access computers and wireless network on the university campus could ensure greater accessibility to electronic resources. The barriers that they face are almost similar to those identified by the

earlier studies. Therefore, it would seem appropriate to ensure there were workshop/training programmes for the undergraduates on information literacy, information searching and how to use e-resources in libraries. It would ensure that students used the library resources and services more effectively in their undergraduate years.

Conclusion and future works

The present study has investigated the information need and information-seeking behaviour of the undergraduate student at Dhaka University. So far, it is one of the very few studies that pay attention to the undergraduate student's information-seeking activities. It would be very helpful for the system administrator, library people, software engineer and other stakeholders of the university to see the findings and so identify the points to work on, develop information resources, and design systems and services that are appropriate for their needs. Furthermore, it would contribute to the very limited research literature on the topic in the developing countries as well as Bangladesh. The present study has a few limitations as well. The target population of the study was only undergraduate students and the sample size for this study (339) was very small. A bigger sample would yield more data and would help to measure the information need and seeking of the undergraduate students. As a result, the output of this study is not representative of the undergraduate students as a whole and, therefore, might not be the true picture of information needs and information-seeking behaviour of the undergraduate students of Dhaka University.

This study has important implications for theory and practice. Theoretically it combines several important contributions made in the field of information-seeking behaviour in the developing country perspective. This finding can contribute to theory development by drawing attention to the common features/functions of elements in various models. Based on new knowledge of how developing country undergraduates perceive their information need and seeking, it will also be of interest in further research to investigate how other countries' undergraduates do. This study will help to raise information-seeking awareness among the undergraduate students and encourage the authorities to adopt appropriate strategies and policies to resolve information-seeking problems. Future work can conduct further research on certain aspects related to this study e.g. information-seeking behaviour of closely related disciplines, interviews of undergraduate students to get a more

in-depth picture of their information-seeking pattern and needs and how to address the difficulties of undergraduate students when they seek information.

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References

- Abdoulaye K (2002) Information-seeking behaviour of African students in Malaysia: A research study. *Information Development* 18(3): 191–196.
- Ahmed SMZ (2014) The use of IT-based information services: An investigation into the current status of public university libraries in Bangladesh. *Program: Electronic Library and Information Systems* 48(2): 167–184.
- Ajiboye JO and Tella A (2007) University undergraduate students' information seeking behaviour: Implications for quality in higher education in Africa. *Turkish Online Journal of Educational Technology-TOJET* 6(1): 40–52.
- Asadullah MN (2014) Is graduate unemployment rate really 47%? *The Daily Star*. Available at: <http://www.thedailystar.net/is-graduate-unemployment-rate-really-47-22302> (accessed 10 July 2018).
- Bangladesh Bureau of Statistics (2017) *Bangladesh Statistics 2017*. Available at: http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/a1d32f13_8553_44f1_92e6_8ff80a4ff82e/Bangladesh2020Statistics-2017.pdf (accessed 10 December 2017).
- Bicen H, Sadikoglu S and Sadikoglu G (2015) The impact of social networks on undergraduate students learning foreign language. *Procedia-Social and Behavioral Sciences* 186: 1045–1049.
- Bøyum I and Aabø S (2015) The information practices of business PhD students. *New Library World* 116(3/4): 187–200.
- Callinan JE (2005) Information-seeking behaviour of undergraduate biology students: A comparative analysis of first year and final year students in University College Dublin. *Library Review* 54(2): 86–99.
- Case DO (2007) *Looking for Information: A Survey of Research on Information Seeking, Needs and Behavior*. 2nd edn. Amsterdam: Elsevier.
- Case DO and Given LM (2016) *Looking for Information: A Survey of Research on Information Seeking, Needs and Behaviour*. London: Emerald.
- Dervin B (1983) An overview of sense-making research: Concepts, methods, and results to date. In: *Annual meeting of the International Communication Association*, Dallas, TX, USA. Available at: <http://communication.sbs.ohio-state.edu/sense-making/> (accessed 27 June 2018).
- Dhaka University (2018) *About Dhaka University*. Available at: www.du.ac.bd (accessed 10 July 2018).
- Ellis D (2005) Ellis's model of information-seeking behavior. In: Fisher KE, Erdelez S and McKechnie EF (eds) *Theories of Information Behavior*. Medford, NJ: Information Today, pp. 138–142.
- Ferdows J and Ahmed SZ (2015) An empirical investigation of information skills among undergraduate students at Dhaka University. *Library Review* 64(4/5): 274–284.
- Furi I and Balog KP (2016) Information seeking behaviour in the digital environment: Information science vs. non-information science students/Informacijskovedenje v digitalnem okolju: primerjavastudentovinformacijskeznosti in studentovdrugih druzboslovnih smeri. *Knjiznica* 60(1): 61–82.
- Ge X (2010) Information-seeking behaviour in the digital age: A multidisciplinary study of academic researchers. *College & Research Libraries* 71(5): 435–455.
- Hiller S (2002) How different are they? A comparison by academic area of library use, priorities, and information needs at the University of Washington. *Issues in Science and Technology Librarianship* 33(1).
- Hossain MU, Hossain MA and Islam MS (2017) An assessment of the information needs and information-seeking behaviour of Members of Parliament (MPs) in Bangladesh. *Information and Learning Science* 118(1/2): 48–66.
- Islam MA and Tsuji K (2010) Assessing information literacy competency of information science and library management graduate students of Dhaka University. *IFLA Journal* 36(4): 300–316.
- Joo S and Choi N (2015) Factors affecting undergraduates' selection of online library resources in academic tasks: Usefulness, ease-of-use, resource quality, and individual differences. *Library Hi Tech* 33(2): 272–291.
- Kakai M, Ikoja-Odong R and Kigongo-Bukenya IMN (2004) A study of the information seeking behavior of undergraduate students of Makerere University, Uganda. *World Libraries* 14(1): 1–22.
- Krikelas J (1983) Information-seeking behavior: Patterns and concepts. *Drexel Library Quarterly* 19: 5–20.
- Korobili S, Malliari A and Zapounidou S (2011) Factors that influence information-seeking behavior: The case of Greek graduate students. *Journal of Academic Librarianship* 37(2): 155–165.
- Kuhlthau C (1994) *The library research process: Case studies and inventions with high school seniors in advanced placement English classes using Kelly's theory of constructs*. Unpublished Doctoral Dissertation, Rutgers University, New Brunswick, NJ, USA.
- Mahadi SRS, Jamaludin NN, Johari R, et al. (2016) The impact of social media among undergraduate students:

- Attitude. *Procedia-Social and Behavioral Sciences* 219: 472–479.
- Marouf L and Anwar MA (2010) Information-seeking behaviour of the Social Sciences faculty at Kuwait University. *Library Review* 59(7): 532–547.
- Maybee C (2006) Undergraduate perceptions of information use: The basis for creating user-centered student information literacy instruction. *Journal of Academic Librarianship* 32(1): 79–85.
- Safahieh H (2007) *Information needs and information seeking behaviour of international students in Malaysia*. Master's Thesis, University of Malaya. Available at: <http://repository.um.edu.my/231> (accessed August 11 2018).
- Sarkhel J and Khan M (2014) Information needs and information seeking behaviour of faculty members of agricultural universities in Bangladesh: A study. *International Journal of Social Sciences* 24(1): 23–36.
- Shoeb MZH (2011) Information literacy competency of freshman business students of a private university in Bangladesh. *Library Review* 60(9): 762–772.
- Singh KP and Satija MP (2007) Information seeking behaviour of agricultural scientists with particular reference to their information seeking strategies. *Annals of Library and Information Studies* 54: 213–220.
- Singh KP, Kumar M and Khanchandani V (2015) Information needs and information seeking behaviour of foreign students in University of Delhi: A survey. *International Journal of Knowledge Content Development & Technology* 5(2): 25–43.
- Talja S, Keso H and Pietiläinen T (1999) The production of 'context' in information seeking research: A meta theoretical view. *Information Processing & Management* 35(6): 751–763.
- Tanacković SF, Radmilović D and Badurina B (2017) Information about the European Union in an acceding country: A survey of needs and information seeking behavior of public library users in Croatia. *Information Development* 33(2): 133–152.
- University Grants Commission (2018) *List of universities in Bangladesh*. Available at: <http://www.ugc.gov.bd/en/home/university/private/75> (accessed 21 February 2018).
- United Nations (2018) Leaving the LDCs category: Booming Bangladesh prepares to graduate. Department of Economic and Social Affairs, United Nations. Available at: <https://www.un.org/development/desa/en/news/policy/leaving-the-ldcs-category-booming-bangladesh-prepares-to-graduate.html> (accessed 10 January 2018).
- Urquhart C, Thomas R, Armstrong C, et al. (2003) Uptake and use of electronic information services: trends in UK higher education from the JUSTEIS project. *Program-Electronic Library and Information Systems* 37: 168–180.
- Wei W (1995) Rethinking science library services: A user study at the University of California, Santa Cruz. *Science and Technology Libraries* 15(3): 17–33.
- Whitmire E (2001) A longitudinal study of undergraduates' academic library experiences. *Journal of Academic Librarianship* 27(5): 379–85.
- Wilson TD and Walsh C (1996) *Information Behaviour: An Inter-Disciplinary Perspective: A Review of the Literature*. London: British Library Research and Innovation Centre.
- Wilson TD (1997) Models in information behaviour research. *Journal of Documentation* 55(3): 249–270.
- Wilson TD (1999) Models in information behaviour research. *Journal of Documentation* 55(3): 249–270.
- Wilson TD (1981) On user studies and information needs. *Journal of Documentation* 37(1): 3–15.

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Appendix

1. Demography
 - a. Faculty name :
 - b. Year : 1st 2nd 3rd 4th
 - c. Semester : 1st 2nd 3rd 4th 5th 6th 7th 8th
 - d. Type of program : Only course work Course work and research monograph
 Course work and report writing Others All of these
 - e. Gender : Male Female
 - f. Age : Less than 16 16-18 19-21
 22-24 25-27
 - g. Residence : Student dormitory Stay at residence Rent house/Mess
2. Which of the following information topics do you often need? (Multiple answers)

<input type="checkbox"/> Academic semester	<input type="checkbox"/> News	<input type="checkbox"/> Course related
<input type="checkbox"/> Business	<input type="checkbox"/> Job related	<input type="checkbox"/> Sports
<input type="checkbox"/> Entertainment	<input type="checkbox"/> Health	<input type="checkbox"/> Higher education
<input type="checkbox"/> Politics	<input type="checkbox"/> Literature	<input type="checkbox"/> Science and Technology
<input type="checkbox"/> Arts and literature	<input type="checkbox"/> Economics	<input type="checkbox"/> Daily life
<input type="checkbox"/> Preparing assignment	<input type="checkbox"/> Research	<input type="checkbox"/> Immigration
<input type="checkbox"/> General knowledge	<input type="checkbox"/> Family	<input type="checkbox"/> All of these
<input type="checkbox"/> Others		
3. Where do you often find the needed information? (Multiple answers)

<input type="checkbox"/> Library	<input type="checkbox"/> Social media	<input type="checkbox"/> Discuss with friends	<input type="checkbox"/> Notice board
<input type="checkbox"/> Website	<input type="checkbox"/> Seminar	<input type="checkbox"/> Discuss with faculty	<input type="checkbox"/> search engine
<input type="checkbox"/> Group discussion	<input type="checkbox"/> Newspaper	<input type="checkbox"/> Discuss with family	<input type="checkbox"/> Journals
<input type="checkbox"/> Cyber cafes	<input type="checkbox"/> Lectures	<input type="checkbox"/> Radio	<input type="checkbox"/> TV
4. How often do you visit the library?

<input type="checkbox"/> Almost daily	<input type="checkbox"/> Once in a week	<input type="checkbox"/> Twice in a week	<input type="checkbox"/> Several times in a week
<input type="checkbox"/> Once in a month	<input type="checkbox"/> Twice in a month	<input type="checkbox"/> Several times in a month	<input type="checkbox"/> Never
<input type="checkbox"/> Others			
5. Why do you visit the library? (Multiple answers)

<input type="checkbox"/> To study	<input type="checkbox"/> Reading job related book	<input type="checkbox"/> To borrow books
<input type="checkbox"/> A quiet place to read	<input type="checkbox"/> Browsing shelves	<input type="checkbox"/> Reference
<input type="checkbox"/> To use the computers	<input type="checkbox"/> OPAC	<input type="checkbox"/> Reprography service
<input type="checkbox"/> To read newspapers	<input type="checkbox"/> To use the Internet	<input type="checkbox"/> For research
<input type="checkbox"/> To access to online journals	<input type="checkbox"/> Attending seminar	<input type="checkbox"/> To read magazines
<input type="checkbox"/> Others		
6. What type of information sources do you prefer?

<input type="checkbox"/> Printed	<input type="checkbox"/> Electronic	<input type="checkbox"/> Both of these sources
----------------------------------	-------------------------------------	--
7. Please identify the e-sources you often use (Multiple answers).

<input type="checkbox"/> E-journal	<input type="checkbox"/> E-Book	<input type="checkbox"/> E-resources	<input type="checkbox"/> E-mail
<input type="checkbox"/> OPAC	<input type="checkbox"/> Other portable computer databases	<input type="checkbox"/> Radio	
<input type="checkbox"/> Web, e.g. Google	<input type="checkbox"/> Social media	<input type="checkbox"/> Online databases	<input type="checkbox"/> CD ROM
<input type="checkbox"/> Portals	<input type="checkbox"/> Television	<input type="checkbox"/> All of these	
<input type="checkbox"/> Others			
8. Which sources do you use the most for your academic works? (Multiple answers)

Library books	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Library card catalogue	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Library OPAC	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Journal articles	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Class lectures	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Reference Librarian	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Textbooks	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Browsing shelves for books	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always

Abstracts and indexes	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Subject Librarian	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Social media	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Online forum	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Thesis Supervisor	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Lecture's handouts	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
E-resources (database)	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Search engine	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Group discussion	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Faculty members	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Attending seminar	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Friends	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Dissertation	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always
Myself	1-Never,	2-Rarely,	3-Sometimes,	4-Often,	5-Always

Others, please specify

9. Are you satisfied with the library services?

- Very dissatisfied Moderately dissatisfied Slightly dissatisfied Neutral
 Slightly satisfied Moderately satisfied Very satisfied

10. How do you rate your ability to use the following information sources?

- | | | | | | |
|---|------------------------------------|-------------------------------|-------------------------------|------------------------------|-----------------------------------|
| <input type="checkbox"/> Bibliography | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Encyclopedia | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Dictionary | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Abstract and Index | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Library catalogue | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> OPAC | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Google | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Google Scholar | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |
| <input type="checkbox"/> Online databases | <input type="checkbox"/> very good | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> bad | <input type="checkbox"/> Very bad |

11. If you face the difficulties, please identify the barriers (Multiple answers)

- Lack of knowledge to use OPAC
 Slowness in downloading information from internet
 Difficulty in accessing electronic resources
 Lack of awareness of various electronic databases
 Inability to locate materials
 Difficulty with locating articles in journals
 Inadequacy of library resources
 Lack of time
 Too much information to deal with
 Inadequacy of library resources
 Less number of copies
 Inability to deal with information overload
 Lack of ICT knowledge
 Lack of knowledge in search strategies
 Shyness in asking for assistance
 Limited knowledge on the use of keywords
 Inability to seek, to obtain, and to evaluate information
 Inadequate knowledge about using the computer
 Inadequate knowledge about library system
 Others, please specify



Status of secondary school libraries and librarians in Bangladesh

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Abstract

The purpose of this study is to explore the current environment of secondary school libraries and librarians in Bangladesh. To achieve this objective, an exploratory mixed method study was conducted to ensure the best possible outcomes. In the qualitative phase, besides literature review, five school librarians were interviewed. Based on the output in the qualitative phase, a questionnaire was designed for quantitative phase and collected 87 responses using an online survey. In general, it is found that the development of libraries and creating qualified school library professionals have been slow due to a lack of governmental and non-governmental initiatives. School libraries, where they exist, offer minimal services and facilities; school librarians are not integrated with the teaching and learning process. Finally, the school library is identified as being of lesser significance to other priorities in the country's education system and annual budget, and the resulting issues and challenges are, therefore, an important topic and issue of significance.

Keywords

Bangladesh, school librarian, school library, secondary school libraries, teacher-librarian

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Introduction

Secondary education in Bangladesh

The Government of Bangladesh (GOB) places great importance on education. Education for All (EFA) is the constitutional responsibility of the Government and the constitution affirms equal rights in education for all. In Bangladesh, secondary education is managed and administered by the Ministry of Education (MoE). The system is divided into two significant sub-levels: secondary education (grades 6 to 10) and higher secondary education (grades 11 to 12). The secondary education bodies oversee some 20,000 secondary schools that serve nearly 10.5 million students (Bangladesh Education Statistics (BES), 2017). However, Rahman (2017) stated that most (over 95%) of the secondary schools are privately managed and the Government provides subsidies to those non-government secondary schools (NGSS) under the MPO (Monthly Pay Order) project.

Bangladesh Education Statistics 2015 (adapted from Rahman, 2017) presented some quality indicators on the state of secondary education. It was stated that the teacher-student ratio stands at 1:41; the size of

the average classroom is 60; 67.88% of teachers in schools are trained; 82.21% of schools have computer facilities; 72.98% of schools have an Internet connection, and 71.9% of schools have multimedia facilities. According to the UNESCO Institute for Statistics (n.d.) Bangladesh Country Report, adult (aged 15 years and older) and young adult (aged 15–24) literacy rates reached 72.89% and 92.95% in 2017. Furthermore, the World Bank (2016) reported that Bangladesh achieved gender parity in access, in addition to dramatic decreases in disparities between the highest and lowest consumption quintiles at both the primary and secondary levels.

Despite impressive achievements in enrolment and literacy, secondary education in Bangladesh fails to equip students with the knowledge and skills for keeping up with the needs of the economy (World Bank, 2016). According to Rahman (2017) and

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UNESCO (2012), the linkages between the curriculum and the needs of the economy are disparate. Outdated teaching methods and examinations that test rote memory do not equip students with the analytical skills or creative thinking the country so direly requires. The quality and relevance of secondary education are low. There is a gap between the education provided in cities and the education provided in rural areas, and the gap appears to be still widening.

Secondary school libraries and librarians in Bangladesh

Since its independence in 1971, Bangladesh has established some diverse libraries. However, the overall attainment of 21st-century goals for a well-functioning library and information system is not encouraging (Rahman, 2016). A British Council report (2015) claimed that almost everyone who goes to the library thinks that libraries are highly valuable for society, about 63% of users perceive Bangladeshi libraries as not being technologically modern, and library services are not creative enough. Nonetheless, most of the users expressed the opinion that librarians have the skills to meet their needs.

Access to resources is a significant challenge in Bangladesh particularly in K-12 with no formal library system in schools and citizens have mixed perceptions regarding the role of libraries (British Council Report, 2015). Katz (2016) noted that most children in Bangladesh only have access to textbooks at school; additional materials like storybooks and educational games are rare and 40% of children do not have books other than religious texts at home. Similarly, Tasneem (2017) reported that 40% of librarians in Bangladesh mention the lack of availability and variety of books as one of the critical problems they face in their daily responsibilities at work which adversely affect school libraries in attempting to achieve their educational potential (Rahman, 2016) and, in turn, for librarians to deliver better services. In many schools, where there are libraries, services are not robust and a lack of updated resources is a common challenge.

A study by Shuva and Akter (2011: 69) claims, "ICT status in school and college libraries in Bangladesh is very much disappointing". Imon's (2017) study further pointed out that in secondary schools in Bangladesh students have almost no access to digital libraries. Although the GOB stated their motive in the "Library: aims and objective" chapter of national education policy 2010 (cited in Alam, 2012) that students would get available access to global knowledge through the classroom and school library with the existing ICT facilities, according to Imon (2017), it

is still not happening in schools in Bangladesh. The World Bank (2013) further reported that many underprivileged schools do not have the capacity to invest in libraries and laboratories or these facilities risk being underutilized.

For NGSS to receive MPO recognition they need to fulfill specific requirements and having a library is one of them. However, for the some 20,000 NGSS in Bangladesh, there are only 12,198 school librarians (BANBEIS Database, 2017b) and approximately 9000 schools have dedicated libraries or reading rooms (SLP3—see Methodology section). Abbas (2018) reported that various MPO-listed non-government secondary educational institutions across the country do not have proper libraries despite the availability of librarians. Rahman's (2007) research recounted that during government inspection, many non-government schools borrow books from bookstores, personal libraries or nearby educational institutions to satisfy the library service prerequisite for MPO recognition.

In Bangladesh, the official title for the NGSS librarian post is Assistant Librarian and it is a block post. School librarians are recruited by the specific school governing body under the guidance of the District/Sub-District Education Office. Because school librarians are not recruited by the Non-government Teachers' Registration and Certification Authority (NTRCA), having similar or superior qualifications as subject or specialist teachers, they do not have the opportunity to be promoted to headmaster or principal. (NTRCA is responsible for recruiting teachers for non-government schools, colleges, madrasas, technical and vocational institutions in Bangladesh).

Moreover, according to a 2016 Ordinance directed by the Secondary and Higher Secondary Education Board (SHSEB) Dhaka (part of Bangladesh Gadget-Additional issue 2017), non-governmental school and college librarians or assistant librarians are included as non-teaching and not academic staff which is contrary to the prior ordinances and amendments (SLP1 and Islam, 2018 Facebook group post (President of Library Association of Bangladesh)). Under the said Ordinance, NGSS librarians are also ineligible to vote or to be members of the school or staff committee and this constrains their status in the workplace and any room for their recognition in the broader society. Library professionals and associations in Bangladesh (LAB, BALID and SLABD) have since advocated against the SHSEB Ordinance, but there was no visible initiative taken by the Government or related department to address this issue.

In Bangladesh, only a few scholars have conducted research in relation to school libraries and school librarians based on secondary literature. Those studies

identified that the importance of developing school libraries and creating qualified school library professionals for the longest time, has been overlooked by policymakers in Bangladesh (Dhaka Tribune, 2018a; Islam and Chowdhury, 2006; Rahman, 2017). The school library is considered the last item on the school priority list and there is no regular subvention for libraries in the country's annual budget (Islam and Chowdhury, 2006; Rahman, 2017). Rahman (2016) noted that school libraries are not embedded in the teaching and learning system, but where they exist, they are usually used as spaces to hold students during free periods. Hossain (2018) further goes on to point out that although school librarians have a similar or higher educational qualification and teach in the classroom, they are not invited to library-based co-teaching or contribute to the collaborative lesson planning. To create qualified school library professionals, so far in Bangladesh, there are no courses or programs at the university level that focus on school librarianship.

Overall, school libraries and librarians in Bangladesh are facing significant challenges, mainly due to lack of continuous professional development opportunities, will and awareness, the nonexistence of national policy on the school library system and of course the apathetic attitude of the authorities (Hossain, 2018; Rahman, 2016). Against this background, it appears that understanding the current situation of secondary school libraries and librarians (SSLs) of Bangladesh straight from the school library practitioners is critical. Besides, in view of the lack of literature on school libraries in Bangladesh, it is also equally important to picture the solid context, challenges and focus points for improvement for an array of stakeholders, including school librarians, researchers, educators and policymakers.

The objective of the study

The primary objective of this study is to explore the status of SSLs in Bangladesh from the school library professional themselves with particular emphasis on NGSS. The study also aims to explore the workplace challenges of NGSS libraries and librarians and the initiatives the Government of Bangladesh has taken so far to address the challenges.

Literature review

The role of libraries, in their many forms, around the globe, share a common purpose: to enhance learning and promote a literate society. According to the IFLA/UNESCO School Library Manifesto (IFLA, 1999), "The school library equips students with life-long

learning skills and develops the imagination, enabling them to live as responsible citizens." Research also claims that access to reading materials is a critical factor in developing enthusiastic and skilled readers and there is a direct link between reading levels and learning results (Krashen, 2004).

The richness and quality of a school library program primarily depend upon the workforce available within and beyond the school library (IFLA SLG, 2015). There is a significant correlation between well-resourced school libraries staffed with professional school librarians and students' academic success (Gretes, 2013; Scholastic, 2016). More than 50 years of international research on school librarianship collectively (see, for example, Haycock, 1992, in LRS (2015) School Libraries Impact Studies (www.lrs.org/datatools/school-libraries/impact-studies)) directs that the position of school librarian necessitates formal education in school librarianship and teaching in the classroom setting.

According to the 2015 IFLA SLG, "because the role of school libraries is to facilitate teaching and learning, the services and activities of school libraries need to be under the direction of professional staff with the same level of education and preparation as classroom teachers." Therefore, universities in many developed countries such as the USA, Canada, Australia, New Zealand, Singapore, South Africa offer school librarianship specialized courses and programs to create a solid school library workforce. Similarly, developing countries such as Sri Lanka and China have similar courses and programs (Ranaweera, 2018; Zhang, 2018) with the primary objective of providing education to those who want to work in school libraries and training to the school library professionals.

Staffing structures for school libraries also change subject to the local context, which is influenced by legislation, economic development, and educational infrastructure. The credentials of school librarians vary across the continents and may include librarians with or without teacher training and librarians with training in other library domains (IFLA SLG, 2015). Hossain (2017) reported that the commonly used term of school librarian also goes by other nomenclatures: school librarian, library media specialist, teacher librarian, library teacher, and professeurs documentalistes (in France).

The status (e.g. academic/non-academic) of school librarians varies from country to country too. From the literature review (IFLA SLG, 2015 and IASL (International Association of School Librarianship), 2016), in many developing countries, qualified school librarians are considered teaching staff and enjoy

equal benefits such as salary, professional development and annual pay increases. For example, in France, Portugal, Australia, Canada, and the USA the school librarian (professeur documentaliste and professor bibliotecário) who specializes in librarianship is considered as teaching staff and trained at the same education level and status as the teaching staff. In developing countries such as India, Pakistan, Sri Lanka, Indonesia, China and Malaysia school librarians are an academic member of the school but mostly considered as non-teaching staff. Nonetheless, in Myanmar, Nepal and Cambodia school librarian status is non-teaching and non-academic staff (IASL WOW, 2016). Hossain (2018) pointed out that in Bangladesh since 2017, school librarians are not considered as teaching or academic members of the school staff council.

Methodology

An exploratory mixed method approach was conducted in this study. Initially, in the qualitative phase, five members of the School Library Association of Bangladesh (SLABD) including the President and Secretary General were interviewed online (via voice and text messaging) on Facebook Messenger and IMO (a calling app) to explore the NGSS librarians' current roles and perceptions of their profession, the nature of their work and the impact of different governmental/ministerial decisions on their profession. The data gathered from this phase was collected on an MS Excel spreadsheet under five broad categories: professional status, challenges, library collection and services, ICT facilities and usage, professional development opportunities. The interviewees in the qualitative phase are labeled SLP1, SLP2, SLP3, SLP4 and SLP5.

In the quantitative phase of the study, a questionnaire was developed based on the outcomes of the literature review and interviews in the qualitative phase, which are professional status, library facilities and services, workplace challenges, and opportunities for professional development with a few demographic questions. The questionnaire was then translated into Bengali by a professional translator and pilot tested with three SLABD members and two other academic librarians working at university libraries in Bangladesh and Australia. After the necessary update, the questionnaire was shared with the target population, school librarians, on the SLABD Facebook group.

The total membership of the SLABD Facebook group members was 1281 (March, 2018), but many of them are inactive. In addition, approximately 30%

Table 1. Frequency distribution by gender ($n = 80$).

Gender	No.	%
Male	77	88.5
Female	10	11.5
Total (n)	87	100

to 35% of SLABD Facebook group members are working in libraries in other institutions such as university and college libraries. To acquire clear viewpoints, a few check-in questions were also posted on the SLABD Facebook group. The actual questionnaire link was posted on the SLABD Facebook group in January 2018 and several follow-up posts were made until the end of April 2018 to receive more responses. The responses were automatically recorded and tabulated on Google Forms and analyzed using SPSS (version 25) and MS Office suit. Some respondents omitted to answer all of the questions, and the missing responses are reflected in the varying sample size (n) values.

Besides the survey method, in-depth desk research has been conducted on Google and Google Scholar using English and Bengali keywords. Some of these keywords were combined by Boolean operator 'AND' for retrieving related information.

Diverse project reports from the International Federation of Library Associations and Institutions (IFLA), International Association of School Librarianship (IASL), Ministry of Education Bangladesh, World Bank and UNESCO Bangladesh, Room to Read Bangladesh, British Council Bangladesh, Beyond Access Bangladesh, Bangladesh Association of Librarians, Information Scientists and Documentalists (BALID), Library Association of Bangladesh (LAB), Local Bengali and English newspapers, and SLABD Facebook group posts were consulted. Overall, there was no identifiable primary literature related to the school library and librarians of Bangladesh and a few references in the literature marginally cover the situation of SSLs in Bangladesh. The author attempted to reference original sources to substantiate secondary data utilized.

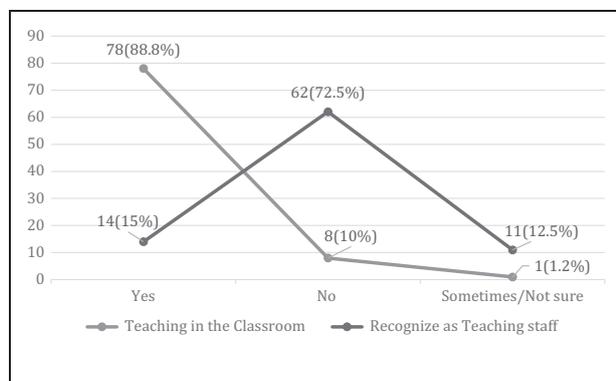
Findings and discussion

The demographic profile of the respondents

From the online survey 87 ($n = 87$) responses were collected which represented 34 out of 64 districts (provinces) in Bangladesh. Most of the survey participants were male (see Table 1) and working in NGSS libraries.

Table 2. Frequency distribution by highest education VS highest LIS qualifications ($n = 87$).

Qualifications	Master's or equiv.	Bachelor's or equiv.	Diploma	Certificate	Total
General ($n = 87$)	58.6% (51)	38% (33)	3.4% (3)	—	100% (87)
Professional-LIS ($n = 87$)	19.5% (17)	5.7% (5)	73.7% (64)	1.1% (1)	100% (87)

**Figure 1.** Teaching responsibility VS recognition as teacher ($n = 87$).

Regarding educational qualifications, more than half of the respondents have a Master's degree in various disciplines. On the subject of professional qualification, (e.g. Library and Information Science – LIS) most of the school librarians have an LIS Diploma.

From Table 2, it is noted that most of the NGSS librarians are well qualified. Besides library management and related tasks, a vast majority (89.7%) of them teach various subjects such as Bengali, English and the wider disciplines of the Sciences and Social Sciences in the classroom setting. Although school librarians have a similar or higher qualification, 71.3% of the respondent school librarians indicated that they were not recognized at the rank of teaching or academic staff in their workplaces (see Figure 1).

Besides professional recognition and status challenges, secondary school librarians in Bangladesh experience other difficulties (see Figure 2) such as lack of professional development, ICT facilities, library budget, and permanent library premises. Budget and professional development (PD) opportunities for Bangladeshi school libraries and librarians leave much to be desired. When asked the question: “In the past two years, have you undertaken any professional development training ($n = 85$)?” about 70% of respondents indicated that they did not receive any PD in the last two years.

However, to be up to date professionally, respondents specified that they follow different Facebook groups and other forms of online platforms. A majority of them (86.2%, $n = 87$) admitted that they are

members of local, regional and international LIS professional groups on Facebook. Remarkably, a vast majority (90.8%) of Bangladeshi NGSS librarians consider Facebook group as a micro-learning PD platform and they are comfortable using it as a professional learning tool. Nonetheless, 52.9% ($n = 87$) survey participants inferred that they are not aware of free online learning resources that can be used for professional learning.

Despite the challenges listed in Figure 2, this study reveals that 56.3% ($n = 87$) participant librarians feel comfortable working as secondary school librarians, 34.5% are not satisfied and 9.2% indicated that they are not sure about the comfortability of their jobs.

The online survey also revealed that only a few NGSS libraries have ICT (computer and Internet) facilities (15.1%, $n = 86$). As a result secondary school libraries are yet to computerize and only provide traditional services such as in-house reading and lending (books and newspapers). When school librarians were asked the question: “What would help you to carry out your work more effectively?”, they pointed out, among other things, cooperation and support from school Principal/Headmaster/other teachers; training on library management systems; ICT, and pedagogical skills that they want to improve (see Table 3).

Other findings related to the status of school library

- 78.3% ($n = 87$) respondents indicated that their schools have permanent room for the library and 96.3% ($n = 82$) said they have a reading room in their school libraries.
- 32.5% ($n = 83$) NGSS libraries have more than 2000 books and 16.9% have fewer than 500 books. Besides books, 43.4% ($n = 83$) of libraries have newspapers and magazines (mostly complimentary issues). However, none of the participants' school libraries have digital resource (ebook) facilities.
- 38.6% ($n = 83$) school librarian specified that number using their libraries exceeds more than 100 per day and 18.1% indicated that they receive fewer than 20 users per day.
- 44.6% ($n = 83$) respondents said that teachers frequently use the library and about 30% implied that they occasionally see the teachers

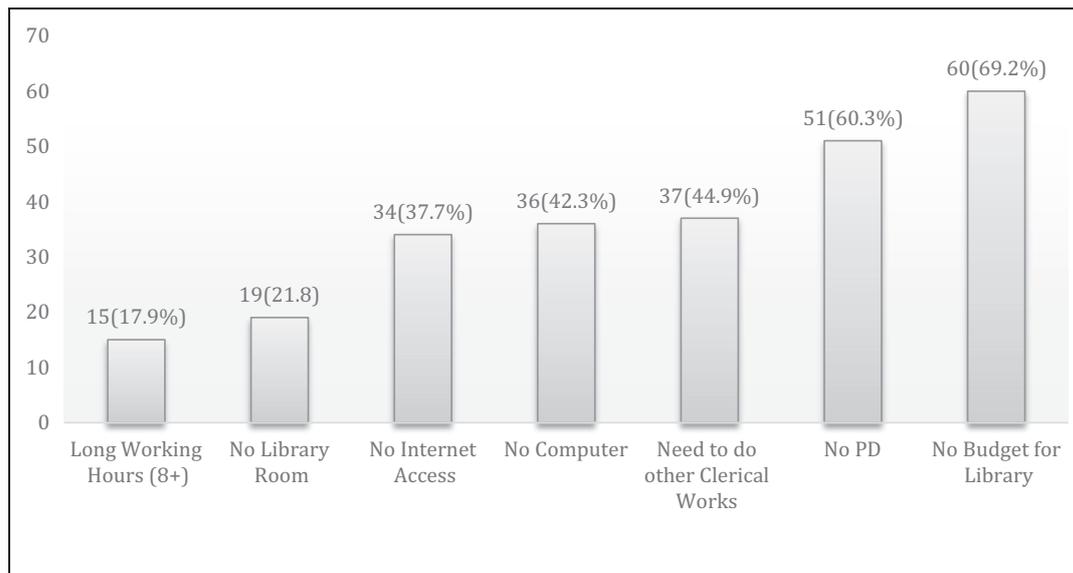


Figure 2. Workplace challenges of Bangladeshi secondary school librarians ($n = 85$)

Table 3. Support and skills desired by the school librarians ($n = 84$).

Desired support and skills	Frequency	%
Better salary	3	3.6
Higher Education	4	4.8
I'm not sure	1	1.2
ICT Training	24	28.6
Library Management Training	43	51.1
Principal/Headmaster/Teachers support	3	3.6
Teaching skills development	6	7.1
Total	84	100.0

are using the school library. However, many teachers are reluctant to cooperate and collaborate with the school librarians (SLP5).

- 70.7% ($n = 82$) NGSS libraries do not have any cooperation with the local public or Non-Government Organizations libraries.
- Most (83.3%, $n = 78$) of the NGSS libraries in Bangladesh have a sole librarian and libraries are overwhelmingly dominated by male library professionals (88.8%).
- In schools where there are libraries, there is no selection policy and no one is responsible for selecting or suggesting books for the library except the headmaster or headmistress and there is no community involvement with the library or for book selection (SLP1). However, data from this survey indicates that 36.6% ($n = 82$) of school libraries have an active library committee and 7.9% have a committee but not an active one.

- Generally, school libraries are considered as the last item on the school priority list and there is no regular provision for libraries in the annual budget (SLP4). Results from this survey shows that 70.4% ($n = 81$) of libraries do not have any budget and about 30% have a budget starting from 5000 BDT to 50,000 BTD (\$65 to \$650).

Government initiatives for secondary school libraries and librarians in Bangladesh

Decisions and efforts have been taken at the government level based on various reports and research (Rahman, 2016). Since 2010, the GOB has taken the initiative of reorganizing the system of education to meet the challenges of the 21st century, and as part of the implementation of the National Education Policy (NEP) 2010. According to the NEP 2010, the broader strategic aim of the library program will be “to enrich the library collection with adequate books and journals at all levels and bring libraries under digital systems gradually” (cited in Alam, 2012: 58). Librarians have been mentioned (in NEP 2012) as the center of learning in the educational institute and librarians and assistant librarians of schools and colleges have been told to determine their proper status. To implement the education policy at the secondary education level, the MoE Bangladesh included Assistant Librarian posts for NGSS in its 2010 Manpower Structure.

Based on the suggestions from the NEP 2010, the number of secondary school librarians in Bangladesh is moving towards a period of rapid growth. During 2011 EY to 2016 EY, about 10,560 Assistant Librarians (MPO)

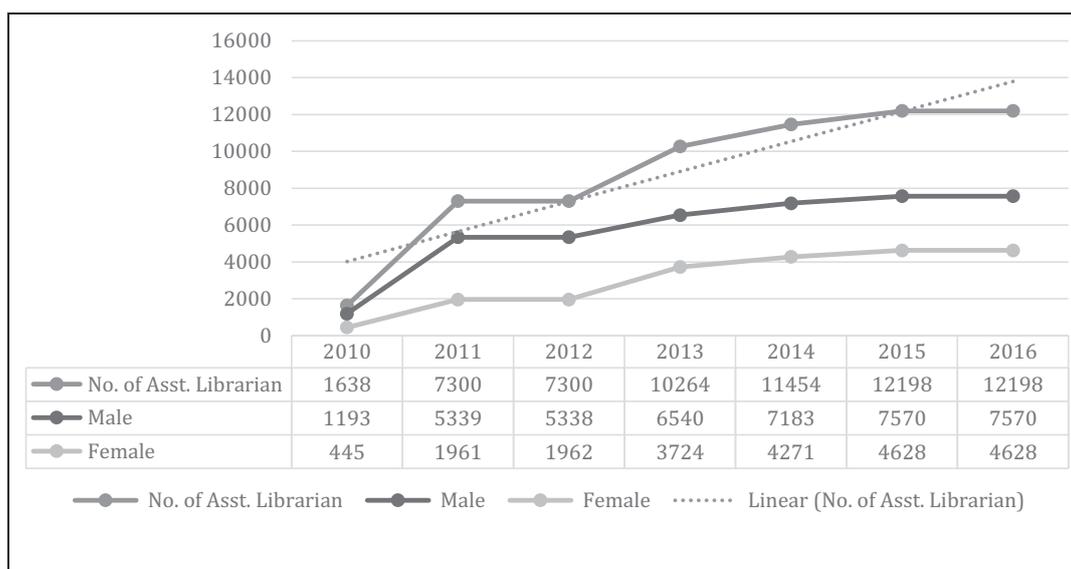


Figure 3. Recruitment of NGSS librarians (Assistant Librarian) from 2010–2016.

Source: BANBEIS –Educational Database <http://data.banbeis.gov.bd/>

were recruited (see Figure 3) and more than 20,000 Assistant Librarians cum Catalogers will be recruited gradually in NGSS, secondary schools and college, and madrasas (MoE website and SLP1). See Figure 3.

To emphasize the importance of books, reading, libraries, and librarians as part of life, the GOB declared 5 February as National Library Day and from 2018 compulsory library lessons were included in secondary schools (Abbas, 2018; SEQAEP, 2016 and SLP3). In support of the Government’s Digital Bangladesh agenda and to ensure access to resources besides text books, as well as to promote reading, secondary schools and madrasas (religious school or college for the study of the Islamic religion, though this may not be the only subject studied) must be equipped with libraries and librarians (Dhaka Tribune, 2018b).

To develop an ICT skilled workforce, during 2009–2018, the GOB established 640 ICT learning centers in secondary schools (MoE, 2018). The Bangladesh Bureau of Educational Information and Statistics (BANBEIS) and Upazila ICT Training and Resource Centre for Education (UITRCE) organized and conducted “Basic ICT Training” for teachers and librarians (BANBEIS, 2017a). By the end of 2018, about 1500 school librarians had attended the training (SLP3) and subsequently facilitated in-house ICT training (librarian lead) for their colleagues such as secondary school Assistant Teachers.

To inculcate reading at all levels and to develop secondary students’ reading habits and stimulate school libraries, the GOB started a nation-wide project: Developing Reading Habit (DRH). The DRH project is known as one of the successful reading and

library promotion projects in the history of the country and was carried out from July 2008 to December 2017 in 250 Upazilas (sub-district) covering 12,117 secondary schools (<http://drh-seqaep.org/>). The overall objectives of this program according to World Bank (2018) were to set-up a reading program at the school level for grades 6 to 10 students to improve the quality of education in secondary level educational institutions by developing reading habits and skills in students through providing: (a) access to a range of selected Bangla and English books in the school library and (b) incentives to enhance use of library services and practice more reading.

According to the DRH project website (<http://drh-seqaep.org/>) and DSHE 2015 report, there were more than eight million students involved in the project, 6669 librarians were trained and more than 6.5 million fiction and non-fiction books were distributed to students through participating schools and libraries. Under the same project, the World Bank (2018) reported that a total of 4,156 institutions allocated new rooms for the DRH library; 12,117 teachers received librarianship training (for schools where there are no librarians) and many schools purchased additional books and collected library furniture.

Propositions for functioning school libraries and librarians in Bangladesh

Formulate a national plan for school library development

This study and previous studies (Hossain, 2018; Islam and Chowdhury, 2006; Rahman, 2017; Shuvo and

Akter, 2011) suggested that a comprehensive national plan for school library development in Bangladesh is critical. It is understood that for a developing country like Bangladesh, it is not possible to establish libraries; recruit qualified school librarians, and ensure ICT facilities for some 20,000 secondary schools overnight. However, it is possible to create a “master plan” that will pave the way for school libraries towards sustainable development. The plan should ensure effective school library programs nationwide and be capable of increasing students’ achievement across the country in order to make good contributions to the Digital Bangladesh plan and other national economic and educational development.

The initial plan may start with the formulation of a national school library policy that ensures the role and responsibilities of school libraries and librarians. Brazil and Vietnam, for example, formulated such a law in 2010 and 2017 respectively. The School Libraries Law in Brazil states that educational institutions at all levels/grades of education and in all educational systems must have a school library (Paiva and Sirihal, 2017). In China, the State Educational Commission has also set up a National School Library Working Committee to implement unified leadership across the country (Xiaobin et al., 1996).

Reconsider school librarian roles and recognition

Bangladesh has to ensure qualified school librarians are equal to other specialized teachers and they should be treated as teaching or at the very least as academic staff. There should be a national authority to recruit school librarians in Bangladesh and the author proposed the NTRCA. It is strongly proposed that the position title for school librarians should be Library Teacher, similar to other specialists such as Physical Education Teacher and Religion Teacher.

An ordinance that requires further revision. The 2017 Ordinance from the past Chairman of the Secondary and Higher Secondary Education Board (SHSEB), Dhaka is contradictory to previous ordinances and amendments and requires further consideration. For example, Assistant Librarians’ (School) initial pay scale is grade 10, and many of them have been upgraded to grade 9 (SLP2 and Islam, 2018). Demonstrators, Physical Education and Assistant Teachers have the same pay scale (grade 9, initially in grade 10) and they are ranked as teaching staff in NGSS (SLP1; Islam, 2018 and Kashem, 2018 Facebook group update).

Regarding festivities, non-teaching staff receive 50% and teaching staff 25%. NGSS librarians have always received a 25% festival allowance as teaching staff (Pervin, 2012). Therefore, economically it is accepted that school librarians are teaching or at very least academic staff. Since there is no other post except teaching and non-teaching at the MPO Education Institute in Bangladesh, and salary allowances, festival allowances, and retirement allowances also come in the name of teaching and non-teaching staff and as per the revised notification dated 5 May 2013 (Islam, 2018), the NGSS Assistant Librarians are teaching/academic staff (SLP5).

Professional development for school librarians

In Bangladesh, the concerned authority should organize regular professional and pedagogical training for school library professional. Zhang (2018) stated that the education of school librarians relies mainly on continuing professional learning because of the lack of specific programs to prepare professional school librarians. It is essential to streamline the existing ICT training project for secondary school librarians across the country (Hossain, 2018). Moreover, the attitude and skill of the library professional can be developed positively by conducting seminars and conference on school librarianship at national, regional, and district levels. School librarians themselves need to be proactive, be a self-directed and hands-on explorer of technology which can be an effective method of professional development.

Budget allocation for school libraries

Funding is crucial to the development of libraries and their services; it is the sine qua non of performance improvement too. This study found that the majority (69.2%) of school libraries in Bangladesh do not have any budget. Therefore, the GOB needs to allocate financial support for the development of the school library sector. Combined efforts are encouraged to be made by the appropriate supervisory bodies to monitor the effective utilization of funds allocated to school libraries.

Form a digital school library network and promote e-book reading

Finding from this study confirms that lack of reading resources is a significant challenge in school libraries in Bangladesh. With the country moving towards a digital future, it is essential that school libraries in Bangladesh also evolve with time. To attract young readers, librarians need up-to-date collections in both print and digital formats, which is also encouraged in

the National Education Policy 2010. Since most of the secondary schools have a good ICT infrastructure (BES, 2015 cited in Rahman, 2017), Bangladesh has generous opportunities to develop digital school libraries (Nasiruddin, 2017) and promote e-book and e-reading (electronic reading) nationwide.

School librarians can act as pioneers of a “digital school library network and e-book reading initiative” as they are ICT trained and familiar with online sources and services. The initial project can be developing a school library website using free website builders such as Google site, Wordpress.com, Wix.com or Weebly.com.; and then link free e-book portals (such as Storyline Online (www.storylineonline.net), Epic (www.getepic.com), Starfall (www.starfall.com), Book Adventure (www.bookadventure.com), ICDL (<http://en.childrenslibrary.org>) and Khan Academy (www.khanacademy.org) on the library website which enable library user to access reading resources 24/7. The author has composed a comprehensive list of free e-book sites that can be found at <https://goo.gl/u6oRFV>.

Commence a school librarianship specialized program in Bangladesh

From the literature review, it is learned that both teaching and librarianship require knowledge relating to the discipline and a set of skills. Therefore, there is a need to teach those related skills including information and digital literacies to LIS students planning to work in school libraries (Udina, 2013). Local universities should be encouraged to gradually implement school librarianship specialization in their Bachelor’s and Master’s programs or at the very least offer certificate or diploma courses in school librarianship that focus on library management and pedagogic skills.

Conclusion

The importance of school libraries and librarians is not overstated as cruxes of knowledge to the young minds. They are, in fact, an almost necessary and complementary element to any robust education system, and it is good that this fact is finally being acknowledged in Bangladesh. Recruitment of secondary school assistant librarians and a National Library Day are the first steps of progression. The next step is to secure 21st-century library facilities and qualified school librarians that work in harmony with the education system.

This study explored the general environment of secondary school libraries and found that they are not on par with providing necessary services required of the NEP 2010 for 21st-century learners. School

librarians are facing considerable challenges in their workplaces. The GOB and the relevant authorities need to consider the dignity and social status of LIS professionals by formulating appropriate and equitable policies for all school professionals. The GOB should ensure each school has a library and librarian, budget allocation for school libraries, ICT facilities, development projects of various kinds, attention at governmental levels and in the media, and, most importantly, a national school library policy that supports the new role for school libraries and librarians. Recommendations emerging from the study may also be used to help resolve issues that may adversely impact school library development in Bangladesh. If the concerned stakeholders can gradually implement the propositions, they will usher in a new era of secondary school library development in Bangladesh.

While no definitive conclusions can be drawn from the study due to its exploratory nature and the small sample size, it nevertheless provides foundations for the development of school libraries, school librarians, their management and challenges in Bangladesh. Besides, it is the first study that has collected data from the school library professionals of Bangladesh. Therefore, because of the lack of literature on school libraries in Bangladesh, the findings of this study have original value, particularly in understanding the context of NGSS libraries and librarians. The author believes that there is a strong need to undertake more a robust investigation such as the British Council’s (2015) Library Landscape Assessment of Bangladesh to probe for the slow growth in school librarianship in Bangladesh. More and more research, discussion and strategies need to be adopted for building a functioning school library system in Bangladesh. The possibilities are endless, but the risks are too high to disregard.

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Supplemental material

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References

- Abbas SM (2018) Schools not introducing library hours will be penalized. *Dhaka Tribune*, 9 February. Available at: www.dhakatribune.com/bangladesh/education/2018/02/07/actions-secondary-schools-not-implementing-library-hours (accessed 9 April 2019).
- Alam MS (2012) Digitization and developing digital library and information support in Bangladesh: Professional challenges. *Bangladesh Journal of Library and Information Science* 2(1): 57–66.
- Bangladesh Bureau of Educational Information and Statistics (BANBEIS) (2017a) Annual Training Calendar. Available at http://banbeis.portal.gov.bd/sites/default/files/files/banbeis.portal.gov.bd/page/2fccd2aa_5ece_470f_9b55_14a17a3f7373/UIRTRCE_Training.pdf (accessed 26 November 2018).
- Bangladesh Bureau of Educational Information and Statistics (BANBEIS) (2017b) Educational Database (Cumulative data from 2010–2016). Available at <http://data.banbeis.gov.bd/> (accessed 12 February 2019).
- Bangladesh Education Statistics (BES) (2017) Ministry of Education. Available at [http://shed.portal.gov.bd/sites/default/files/files/shed.portal.gov.bd/page/100c3c96_562d_4e72_ba9c_444af8fea5a7/Yearly%20Report%202017%20\(1\).pdf](http://shed.portal.gov.bd/sites/default/files/files/shed.portal.gov.bd/page/100c3c96_562d_4e72_ba9c_444af8fea5a7/Yearly%20Report%202017%20(1).pdf) (accessed 29 November 2018).
- British Council (2015) Library Landscape Assessment of Bangladesh. Available at: https://www.britishcouncil.org.bd/sites/default/files/library_landscape_interim_report_-_draft_5_may.pdf (accessed 28 March 2019).
- Dhaka Tribune (2018a) Libraries in a changing world. *Dhaka Tribune Editorial*, 5 February. Available at <https://www.dhakatribune.com/opinion/editorial/2018/02/05/libraries-changing-world/> (accessed 30 November 2018).
- Dhaka Tribune (2018b) Muhith wants to install a library in every school. *Dhaka Tribune*, 5 February. Available at www.dhakatribune.com/bangladesh/education/2018/02/05/muhith-library-every-school (accessed 30 November 2018).
- Directorate of Secondary and Higher Education (DSHE) (2015) Semi-annual Monitoring Report (July–December 2015). Dhaka: Ministry of Education Bangladesh. Available at: <https://goo.gl/7Nuzac> (accessed 28 March 2018).
- Gretes F (2013) *School Library Impact Studies: A Review of Findings and Guide to Sources*. Garrison, MD: Harry & Jeanette Weinberg Foundation.
- Hossain Z (2016) Towards a lifelong learning society through reading promotion: Opportunities and challenges for libraries and community learning centres in Viet Nam. *International Review of Education* 62(2): 205–219.
- Hossain Z (2017) Professional development via Facebook Group: Perception of school librarians. In: *International Association of School Librarianship (IASL) annual conference*, Longbeach, CA, USA, 4–8 August 2017, pp. 142–154.
- Hossain Z (2018) The current situation of secondary school librarians in Bangladesh: A study. In: *IASL annual conference*, Istanbul, Turkey, 6–11 May 2018. Available at: <https://journals.library.ualberta.ca/slw/index.php/iasl/article/view/7143> (accessed 10 March 2019).
- Imon IMM (2017) *ICT integration in secondary education in Bangladesh: A study of policy and practice*. Master's Thesis, University of Oslo, Norway. Available at <https://www.duo.uio.no/bitstream/handle/10852/61350/1/Imran-Thesis-CIE-17-.pdf> (accessed 19 January 2019).
- International Association of School Librarianship (IASL) (2016) Window of the World (WOW) of school libraries: School Library Country Profiles. Available at: <https://www.iasl-online.org/WOW> (accessed 25 November 2018).
- International Federation of Library Associations and Institutions (IFLA) (1999) IFLA/UNESCO School Library Manifesto 1999. Available at: <https://www.ifla.org/publications/iflaunesco-school-library-manifesto-1999> (accessed 6 March 2018).
- IFLA School Libraries Section Standing Committee (IFLA SLG) (2015) IFLA school library guidelines. 2016-03-09. Available at: <http://www.ifla.org/files/assets/school-libraries-resource-centers/publications/ifla-school-library-guidelines.pdf> (accessed 24 November 2018).
- Islam A (2018) (President of Library Association of Bangladesh) ল্যাবরে প্রচেষ্টার কমতিনিই (LAB is doing its best). Facebook update, 17 October. Available at: <https://www.facebook.com/groups/1307388899327541/permalink/1953065791426512/> (accessed 21 October 2018).
- Islam MS and Chowdhury MAK (2006) Library and information science education system in Bangladesh: An overall situation. In: *Proceedings of the Asia-Pacific conference on library & information education & practice 2006 (A-LIEP 2006)* (eds Khoo C, Singh D and Chaudhry AS), Singapore, 3–6 April 2006, pp. 358–363.
- Kashem MA (2018) যবে সব কারণে /যুক্তিতে স্কুল-কলেজে গ্রন্থাগারিকি ও সহকারী গ্রন্থাগারিকদেরকে শিক্ষক হিসেবে গণ্য করা উচিত (The reasons why school and college librarians and assistant librarians should be considered as teachers). Facebook update, 11 January. Available at: <https://www.facebook.com/groups/1890012784550026/permalink/1982004092017561/> (accessed 22 March 2018).
- Katz A (2016) How libraries in Bangladesh are creating a culture of reading beyond the classroom. Beyond Access Bangladesh. Available at: beyondaccess.net/2016/04/04/how-libraries-in-bangladesh-are-creating-a-culture-of-reading-beyond-the-classroom/ (accessed 19 March 2018).

- Krashen SD (2004) The power of reading: Insights from the research. ABC-CLIO. Available at: <https://goo.gl/5UM33B> (accessed 6 March 2018).
- Library Research Service (LRS) (n.d.) School Libraries Impact Studies. Available at: <https://www.lrs.org/data-tools/school-libraries/> (accessed 28 March 2019).
- Ministry of Education Bangladesh (MoE) (2018) শিক্ষাক্ষেত্রে যুগান্তকারী উন্নয়ন ২০০৯-২০১৮ (Revolutionary development in education 2009–2018). Available at <http://www.shed.gov.bd/site/view/publications/Publications> (accessed 29 November 2018).
- Ministry of Education Bangladesh (MoE) SEQAEP (2016) About Directorate of Secondary and Higher Education. Ministry of Education Bangladesh. Available at: <https://goo.gl/qRa7vt> (accessed 12 March 2018).
- Nasiruddin M (2017) Digital school libraries in Bangladesh: A role model for changing lives of the extreme poor children. *International Journal of Library and Information Science* 9(4): 25–36.
- National Education Policy 2010 (2010) Government People's Republic of Bangladesh. Available at: <https://moedu.gov.bd/site/page/318a22d2-b400-48a7-8222-303ab11cc205/National-Education-Policy-2010-> (accessed 29 November 2018).
- Paiva M and Sirihal DA (2017) School library contribution to student achievement as measured by the Brazil-Reading Test. *School Libraries Worldwide* 23(1): 120–150.
- Pervin M (2012) কলেজে-গ্নন্থাগারিকিও শিক্ষক (Indeed College Librarians are teachers). *The Daily Ittefaq*, 9 December. Available at: <http://archive.ittefaq.com.bd/index.php?ref=MjBfMTJfMDI1fMTJfMV8xOF8xXzIzNjEpercent3D> (accessed 19 March 2018).
- Rahman M (2017) Secondary education: A long way to go. *The Daily Star*, 28 February. Available at: <https://www.thedailystar.net/education-employment/secondary-education-long-way-go-1366504> (accessed 24 November 2018).
- Rahman MZ (2016) Minimum standards for school libraries to enhance quality education: Bangladesh perspectives. Available at: https://www.researchgate.net/publication/295605833_Minimum_Standards_for_School_Libraries_to_Enhance_Quality_Education_Bangladesh_perspectives (accessed 29 November 2018).
- Ranaweera P (2017) Challenges and issues that are faced by the Sri Lankan school library staff (2000–2016 period). In: *International Association of School Librarianship (IASL) annual conference*, Long Beach, CA, USA, pp. 250–254. International Association of School Librarianship.
- Scholastic (2016) School libraries work! A compendium of research supporting the effectiveness of school libraries. Available at: www.scholastic.com/slw2016 (accessed 19 March 2018).
- SEQAEP (2016) Developing the Reading Habit report by Secondary Education Quality and Access Enhancement Project. Available at: <http://www.seqaep.gov.bd/bsk.php> (accessed 25 March 2018).
- Shuva NZ and Akter R (2011) Bridging digital divide through public, school and college libraries: A case study of Bangladesh. *Journal of the Bangladesh Association of Young Researchers* 1(1): 49–77.
- Tasneem S (2017) Adopting a library. *Dhaka Tribune*, 19 February. Available at: www.dhakatribune.com/magazine/weekend-tribune/2017/02/19/adopting-a-library (accessed 19 November 2018).
- Udina K (2014) Emerging technologies or technophobia in school libraries survey: Technology and learning in school libraries in Croatia. In: *2nd European conference on information literacy (ECIL 2014)*, Dubrovnik, Croatia, 20–23 October 2014, pp. 291–296. Cham: Springer.
- UNESCO (2012) UNESCO Country Programming Document for Bangladesh 2012–2016. Dhaka: UNESCO Office. Available at: <http://unesdoc.unesco.org/images/0021/002168/216874E.pdf> (accessed 23 February 2018).
- UNESCO (n.d.) UNESCO Institute for Statistics: Bangladesh Country Report/Education and Literacy. Available at: <http://uis.unesco.org/country/BD> (accessed 28 December 2018).
- World Bank (2013) Bangladesh Education Sector Review Seeding Fertile Ground: Education That Works for Bangladesh. Human Development Sector South Asia Region. Dhaka: World Bank Office. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/16768/806130ESW0BD0E00Box379859B00PUBLIC0.pdf;sequence=1> (accessed 21 October 2018).
- World Bank (2016) Bangladesh: Ensuring Education for All Bangladeshis. Available at: <http://www.worldbank.org/en/results/2016/10/07/ensuring-education-for-all-bangladeshis> (accessed 6 April 2018).
- World Bank (2018) Implementation Completion and Results Report Credit Number: 4475-BD AND 5325-BD: Education Global Practice South Asia Region. Available at: <http://documents.worldbank.org/curated/en/557031529710864970/ICR00004427-BD-SEQAP-P106161-06192018.docx> (accessed 29 November 2018).
- Xiaobin J, Yunxiang D, Aiqin S, et al. (1996) China's primary and secondary school libraries: Yesterday, today, and tomorrow. In: *62nd IFLA general conference*, Beijing, China, 25–31 August 1996. Available at: <http://archive.ifla.org/IV/ifla62/62-xiaj.htm> (accessed 28 March 2019).
- Zhang J (2018) Reforming education for school librarians in China. In: *IFLA WLIC conference*, Kuala Lumpur, Malaysia, 24–30 August, 2018. Available at: <https://www.ifla.org/files/assets/school-libraries-resource-centers/conferences/2018/zang-abstract.pdf> (accessed 9 April 2019).

Author biography

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Abstracts

قَتَطَفَات

Changing greek libraries: A continuous dialogue

تغيير المكتبات اليونانية: حوار مستمر

جيرجيوس جلوسيويتيس؛ إيفجينيا فاسيلاكاي؛ إيفا سيميرتازكي

مجلة إفلا، 2-45،

ملخص:

في زمن تميزه التطورات الجذرية اجتماعيًا واقتصاديًا وتكنولوجياً، يشهد قطاع المكتبات وعلوم المعلومات في اليونان سلسلة من التغييرات في علاقة جدلية مع التغيرات التكنولوجية. للمكتبات باع طويل باليونان بدايةً من أكاديمية أفلاطون وليقيون أرسطو في القرن الخامس قبل الميلاد وحتى نقل المكتبة الوطنية اليونانية إلى المركز الثقافي التابع لمؤسسة ستافروس نياركوس. تهدف هذه الدراسة إلى تقديم نظرة شاملة وتسجيل العلامات البارزة التي تمثل بداية التغييرات في كل جوانب قطاع المكتبات وعلوم المعلومات باليونان. كما تهدف إلى عرض التغييرات في الشراكات والشبكات والمباني الجديدة ودور المكتبات وعلوم المعلومات في مجال التعليم والتعلم المستمر مدى الحياة.

Impact of tailor-made information literacy provision on rural dwellers participation in sustainable development targets in Nigeria: Implications for public library services to oral societies

تأثير توفير محو الأمية المعلوماتية حسب الطلب على مشاركة سكان الريف في أهداف التنمية المستدامة في نيجيريا: أثر خدمات المكتبة العامة على المجتمعات الشفهية

شيميبي ب. أزووجبو

مجلة إفلا، 2-45،

ملخص:

يقوم هذا البحث بدراسة تأثير توفير محو الأمية المعلوماتية حسب الطلب على مشاركة سكان الريف في ثلاثة من أهداف التطور المستدام. تم استخدام تصميم بحثي مختلط المنهج يتكون من التجارب الميدانية وزيارات الموقع ومجموعات الدراسة المكثفة لجمع البيانات حتى يتمكن من الإجابة على الخمسة أسئلة المطروحة في

الدراسة. ومن النتائج التي توصلت إليها الدراسة، مشاركة سكان الريف الذين حصلوا على محو أمية معلوماتية في أهداف التنمية المستدامة بنسب أكبر ممن يعتمدون فقط على أنظمة الاتصال المعلوماتية المتاحة. كان لتوفير محو الأمية المعلوماتية لعينة من عشرين أسرة تأثير ممتد على سلوك الأسر الأخرى بالقرية. ختامًا، أبرزت الطريقة ثلاثية النهج التي استخدمت في هذه الدراسة إمكانية تحقيق المشاركة الفعالة لسكان الريف في برامج التنمية من خلال توفير محو أمية معلوماتية سياقي. يسفر عن ذلك بعض النتائج التي تتلخص في نموذج واحد. يمكن للمكتبات العامة في نيجيريا والدول النامية استكشاف الاستراتيجيات المصورة في النموذج لإطلاق خدمات التواصل لسكانها الريفيين.

Usage and impact metrics for Parliamentary libraries

مقاييس استخدام وتأثير المكتبات البرلمانية

طارق البغال

مجلة إفلا، 2-45،

ملخص:

تكم أهمية المكتبات البرلمانية في دعم عملية اتخاذ القرار المستنيرة في ظل الديمقراطية. ورغم ضرورة إدراك احتياجات الأعضاء المعلوماتية، يظل استكشاف استخدامات وتأثير تلك المكتبات غير كاف. يقوم هذا البحث بدراسة مكتبة مجلس اللوردات بالمملكة المتحدة نموذجًا للدراسة حيث يتم جمع البيانات وتحليلها بأساليب خاصة بعلم البيانات. تعتبر هذه الأساليب مفيدة في استخلاص المعلومات من المصادر المتاحة التي قد تكون مصممة بهدف جمع البيانات. يتم تحديد عدد من مصادر البيانات المتاحة في مكتبة مجلس اللوردات وعرض مثال عن كيفية استخدام تلك البيانات لفهم استخدامات وتأثير المكتبة. تشير النتائج إلى تنوع كبير في استخدامات الأعضاء، كما تشير إلى وجود علاقة ضعيفة بين الاستخدام وإلقاء الخطب في المجلس. قد تقوم الدراسات المستقبلية باستكشاف مظاهر التأثير الأخرى، ولكن هذه الطرق تمنح بصيصًا من الأمل نحو الوصول إلى مقاييس للمكتبات وخاصة البرلمانية.

Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession:

الممارسات المتجددة والهوية المهنية: كيف يمكن لطرق العمل الجديدة التي ننتهجها أن تعيد تشكيل المهنة وتشكيلنا على الصعيد المهني:

ميليسا آن فريجر-أرنوت

مجلة إفلا، 2-45،

ملخص:

توفر الهوية المهنية عدسة يمكننا من خلالها فهم أنفسنا وفهم مجتمعنا المهني. قد يجد الممارسون الفرديون اختلافًا في هويتهم المهنية من شأنه أن يفودهم إلى إعادة تعريف مهنتهم، بينما قد يكافح أولئك الذين ينتقلون إلى أدوار جديدة أو ينخرطون في مهام جديدة لتغيير اتجاه مهنتهم بشكل عام. الهدف الأول لهذه الدراسة هو تقديم الرؤى الخاصة بكيفية حدوث تطور الهوية المهنية وكيفية اعتبار ظهور المآخذ الجديد غير المعتاد لمهنة المكتبات وعلوم المعلومات استنادًا إلى التجارب المهنية بالعمل في أدوار غير تقليدية فرصة وتهديد للمهنة في الوقت ذاته عن طريق استخدام خبرات خريجي أقسام المكتبات وعلوم المعلومات الذين يقومون بأدوار لا تتعلق بالمكتبات كعدسة. أما الهدف الثاني فهو ترجمة خبرات خريجي أقسام المكتبات وعلوم المعلومات الذين يقومون بأدوار لا تتعلق بالمكتبات إلى توصيات لتعزيز التنوع في تعريف مهنة المكتبات وعلوم المعلومات.

Factors for adoption of OSILS in university libraries of Bangladesh

عوامل من أجل تبني أنظمة أو سيلس (OSILS) في مكتبات جامعات بنجلاديش

محمد جهانجير علام ومحمد مصباح الإسلام

مجلة إفلا، 2-45،

ملخص:

تحدد هذه الدراسة العوامل المؤثرة في تبني أنظمة أو سيلس (OSILS) في مكتبات جامعات بنجلاديش. جرى المسح على 196 متخصص في مجال المكتبات من 14 مكتبة تابعة لجامعات خاصة و7 من مكتبات تابعة لجامعات حكومية من خلال استبيان منظم استخدم بحذر وفقًا للترتيبات المحلية بعد إجراء مسح استطلاعي. تم تحليل العوامل المؤثرة في تبني أنظمة أو سيلس (OSILS) بارتداد مضاعف حيث تم اعتبار الرضا العام متغير غير مستقل ثم تم تطبيق أربعة عشر من عوامل تبني أنظمة أو سيلس (OSILS) على المتغيرات المستقلة. أثبت نموذج تحليل الانحدار المضاعف أهميته وكشف عن أن العوامل التي أثرت بشكل كبير على قرار المتخصصين في مجال المكتبات لاستخدام أنظمة أو سيلس (OSILS) هي فعالية التكلفة والشفرة مفتوحة المصدر ودعم المجتمع وأنظمة النسخ الاحتياطي والاسترجاع وسهولة الاستخدام مع برامج أخرى وعدم الحاجة لرسوم ترخيص. كما بذلت الجهود لأول مرة لتقييم العوامل المهمة لتبني أنظمة أو سيلس (OSILS) في مكتبات الجامعات بنجلاديش، مما يطرح أفكارًا للدراسات المستقبلية.

Information Seeking Behavior of Undergraduate Students: A Developing Country Perspective

سلوك طلاب المرحلة الجامعية في البحث عن المعلومات: منظور دولة نامية

محمد أنور الإسلام وأحمد الإسلام هولادير

مجلة إفلا، 2-45،

ملخص:

الهدف من هذه الدراسة هو التحقق من سلوك طلاب جامعة دكا بنجلاديش في البحث عن المعلومات. وزعت الاستبيانات على الطلاب وجمعت البيانات على مدى ستين يومًا من نوفمبر إلى ديسمبر 2017. تم استعادة 339 استبيانًا من أصل 450 تم توزيعها، بمعدل إجابة 75.33%. اتضح أن أغلب الطلاب الجامعيين بحاجة لمعلومات أكاديمية أو ذات صلة بالوظائف. ولتلبية تلك الاحتياجات يتوجهون للمكتبة للدراسة والاستعداد للاختبارات التنافسية للوظائف. أما في مهامهم الأكاديمية، فيعتمدون على المحاضرات الدراسية، وهم راضون إلى حد بسيط عما يحصلون عليه من خدمات بالمكتبة. وكشفت هذه الدراسة عن ضعف المهارات المعلوماتية لدى الطلاب الجامعيين وعدم وعيهم بموارد المكتبة. ستساعد نتائج هذه الدراسة في تطوير الموارد والخدمات المعلوماتية للطلاب الجامعيين في الدول النامية.

Status of secondary school libraries and librarians in Bangladesh

وضع المكتبات والمكتبيين بالمدارس الثانوية بنجلاديش

زاكر حسين

مجلة إفلا، 2-45،

ملخص:

الهدف من هذه الدراسة استكشاف البيئة الحالية للمكتبات والمكتبيين بالمدارس الثانوية في بنجلاديش. ولتحقيق ذلك، تم إجراء دراسة استكشافية متنوعة المنهج لضمان أفضل النتائج الممكنة. في المرحلة النوعية، إلى جانب دراسة الإنتاج الفكري، تم إجراء مقابلات مع خمسة مكتبيين بمكتبات مدرسية. استنادًا إلى نتائج المرحلة النوعية، تم تصميم استبيان للمرحلة الكمية وجمع 87 إجابة عن طريق مسح عبر الإنترنت. وقد وجد بشكل عام، أن تطوير المكتبات وتأهيل العاملين في مجال المكتبات لطالما كان بطيئًا نتيجة لعدم وجود المبادرات الحكومية أو غير الحكومية. فحيثما وجدت المكتبات المدرسية، تكون الخدمات والمرافق أقل ما يمكن بينما لا ينخرط مكتبيو المكتبات المدرسية في عمليات التعليم والتعلم. وأخيرًا، فقد تم الإشارة إلى أن المكتبات المدرسية أقل أهمية من أولويات أخرى في النظام التعليمي والميزانية السنوية للدولة. وبالتالي، فإن المشاكل والتحديات الناتجة تعتبر موضوعًا مهمًا ومحوريًا.

IJ 45-2 - 英语语言翻译摘要

变革中的希腊图书馆：持续的对话

Changing Greek libraries: a continuous dialogue

Giorgios Glossiotis, Evgenia Vassilakaki, Eva Semertzaki

国际图联杂志, 45-2, 69-80

摘要:

在社会-经济-技术不断发展的时代, 希腊图书馆与信息科学部门(LIS)正在经历着一系列与技术变化有着辩证关系的变革。希腊的图书馆历史悠久, 公元前5世纪有柏拉图研究院和阿里士多德学会, 后转型为位于斯塔夫罗斯·尼亚尔霍斯基基金会文化中心的希腊国家图书馆。本文旨在描述希腊LIS领域各方面的变化以及相应的时间表等。此外, 文章还试图展示开展合作的情况、新的图书馆建筑情况以及LIS教育和终生学习等。

尼日利亚特色的信息素养措施对于参与可持续发展目标的农村居民的影响: 公共图书馆为口语社会提供服务

Impact of tailor-made information literacy provision on rural dwellers participation in sustainable development targets in Nigeria: Implications for public library services to oral societies

Chimezie P Uzuegbu

国际图联杂志, 45-2, 81-103

摘要:

本文调查了信息素养措施对于尼日利亚农村居民参与三个可持续发展目标的影响。采用了一个由田野试验、实地考察和焦点小组手法组成的混合调查方法来收集数据、回答研究中提出的五个问题。结果表明, 接受了信息素养措施的农村居民与他们那些仅仅依赖现有可获取信息交流体系的村民相比, 前者更多地参与了可持续发展目标。20户家庭的样本所提供的信息素养措施对于本村样本外家庭的行为有一个溢出效果。总之, 对本

研究中使用的方法做三角剖分揭示: 通过提供语境信息素养措施, 可以实现乡村居民有效参与发展项目。尼日利亚和类似发展中国家的公共图书馆可以探索此模型传达的策略以便向其乡村居民推出有效的拓延服务。

国会图书馆的使用和影响度量 标准

Usage and impact metrics for Parliamentary libraries

Tarek Al Baghal

国际图联杂志, 45-2, 104-113

摘要:

国会图书馆在支持民主国家做出基于信息的决策上作用重大。了解议员的信息需求是重要的, 但彰显这些图书馆的使用和影响未得到足够探索。本文研究了英国上议院图书馆的具体案例, 采用数据科学领域的技能收集和分析数据。这些技能在从现有来源提取信息上很有用处, 尽管这些线索并非为数据收集而设计。上议院图书馆自有的诸多数据来源被概括出来、同时提供了如何利用这些数据来理解图书馆的使用和影响的案例。结果揭示议员们使用差异巨大而且使用信息与在议院演讲关联微弱。下一步工作应当探究影响的其他指标, 不过这些方法表明制定图书馆度量标准有成功的希望。

发展中的实践探索和职业身份: 如何重塑图书馆职业和从业人员职业身份

Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession

Melissa Ann Fraser-Arnott

国际图联杂志, 45-2, 114-126

摘要:

职业身份为了解我们和我们的职业提供了透视的镜头。个体从业者可能发现他们自己职业身份的转换引得他们重新定义他们的职业, 而那些转入新角色或从事新任务的人们可能会努力从总体上变更职业方向。本文第一个目的是为了解职业身份发展提供深层见解, 以从事非图书馆角色工作

的LIS毕业生工作经历为透视镜、分析基于在非传统角色工作的职业经历,而对于图书馆和信息科学(LIS)出现新的或不寻常的意见可以被看做既是LIS这个行业的机会,也是一次挑战。第二个目的是将在非传统角色工作的LIS毕业生的经历诠释为促进定义LIS这一职业多样化的建议。

在孟加拉大学图书馆采用OSILS的影响因素

Factors for adoption of OSILS in university libraries of Bangladesh

Md. Jahangir Alam, Muhammad Mezbah-ul-Islam

国际图联杂志, 45-2, 127-139

摘要:

本文研究了在孟加拉大学图书馆采用OSILS的影响因素。采用调查问卷形式,问卷内容是在做了试点调查后谨慎采纳的,调查对象为14所私立和7所公立大学图书馆的196名职业图书馆从业者。以多重回归法分析采用OSILS的因素,其中总体满意被设为从属变量,而14个采纳OSILS的因素被设为独立变量。整个回归分析模型意义重大。模型显示:成本有效、开放源代码、社区支持、备份及复原系统、易于与其他软件融合、以及没有授权费用对于影响专业图书馆从业人员采用OSILS至关重要。此外,还第一次对孟加拉大学采用OSILS的重要影响因素作了评估。

大学生寻找信息的行为:发展中国家的视角

Information Seeking Behaviour of Undergraduate Students: A Developing Country Perspective

Md. Anwarul Islam, Ahmadul Islam Howlader

国际图联杂志, 45-2, 140-156

摘要:

本文旨在调查孟加拉达卡大学的大学生寻找信息的行为。通过分发调查问卷,收集大学生们在2017年11月至12月之间的60天的情况。共发出450份问卷、收回339份,收集率为75.33%。我们发现,大多数大学生需要学术和工作相关信息。为满足这些需求,他们通常去图书馆学习、为竞争激烈的就业考试做准备。在从事学术研究相关的工作中,他们严重依赖课堂授课、对于获得的图书馆服务略表满意。通过研究,我们发现大学生的信息技能贫瘠而且他们不了解图书馆的资源。本研究成果有助于发展中国家为大学生开拓信息资源和服务。

孟加拉国中学图书馆及馆员现状

Status of secondary school libraries and librarians in Bangladesh

Zakir Hossain

国际图联杂志, 45-2, 157-167

摘要:

本文旨在探索目前孟加拉国中学图书馆和图书馆员(SSL)的现状。为此,开展了一次混合方法的探索性研究,以确保可能达到的最佳效果。在研究的定性阶段,除去文献审阅,还采访了五家学校图书馆。基于定性阶段结果设计了用于定量阶段的问卷,并通过线上调查收集了87份答卷。从总体结果上看,图书馆的发展和学校图书馆合格专业人员的培养由于缺失相应的举措而迟缓不前。有的学校图书馆服务和设施很有限;学校图书馆员未能整合到教学与学习流程中。最后,在孟加拉国教育体系和年度预算里,学校图书馆被认为是次要的一环。

Sommaires

Changing Greek libraries: a continuous dialogue

[Faire évoluer les bibliothèques grecques: un dialogue permanent]

Giorgios Glossiotis, Evgenia Vassilakaki, Eva Semertzaki

IFLA Journal, 45-2, 69-80

Résumé :

À une époque d'évolution radicale sur le plan social, économique et technologique, le secteur des sciences de l'information et des bibliothèques en Grèce est soumis à toute une série de changements en rapport

dialectique avec les changements technologiques. Les bibliothèques grecques ont une longue histoire, qui va de l'Académie de Platon et du Lycée d'Aristote au 5^e siècle avant J.-C. jusqu'à l'installation de la Bibliothèque nationale de Grèce au Centre culturel de la Fondation Stavros Niarchos. Cet article offre une vue d'ensemble et indique les étapes majeures marquant le début des changements en cours dans chaque aspect du paysage des SIB en Grèce. Il évoque également les changements au niveau des partenariats et des réseaux, les nouveaux bâtiments ainsi que le rôle de la formation aux SIB et de l'apprentissage permanent.

Impact of tailor-made information literacy provision on rural dwellers participation in sustainable development targets in Nigeria: Implications for public library services to oral societies

[L'impact de la fourniture d'une maîtrise personnalisée de l'information sur la participation des populations rurales aux objectifs de développement durable au Nigeria: les implications pour les services des bibliothèques publiques à l'intention des sociétés à tradition orale]

Chimezie P Uzuegbu

IFLA Journal, 45-2, 81-103

Résumé :

Cet article examine l'impact de la fourniture d'une maîtrise personnalisée de l'information sur la participation des populations rurales à trois objectifs de développement. Une étude à méthodologie mixte a été menée, comprenant approche expérimentale sur le terrain, visite de sites et groupes de discussion afin de collecter des données pour répondre aux cinq questions posées dans le cadre de l'étude. Les résultats montrent que les populations rurales auxquelles on a fourni une maîtrise de l'information participent plus aux objectifs de développement durable que leurs homologues qui dépendent uniquement des systèmes existants de communication d'informations auxquels ils ont accès. Fournir une maîtrise de l'information à un échantillon de vingt foyers a eu un effet d'entraînement sur le comportement d'autres foyers du même village qui n'étaient pas inclus dans cet échantillon. En conclusion, la triangulation des méthodes utilisée dans cette étude montre que fournir une maîtrise contextuelle de l'information est un moyen de parvenir à une participation active des populations rurales aux programmes de développement. On en a déduit

certaines implications qui sont résumées dans un modèle. Les bibliothèques publiques du Nigeria et d'autres pays en développement peuvent s'inspirer de la stratégie évoquée dans ce modèle pour mettre en place des services efficaces de sensibilisation à l'intention de leurs communautés rurales locales.

Usage and impact metrics for Parliamentary libraries

[Usage et impact des indicateurs pour les bibliothèques parlementaires]

Tarek Al Baghal

IFLA Journal, 45-2, 104-113

Résumé :

Dans les démocraties, les bibliothèques parlementaires contribuent de façon importante à une prise de décision bien informée. Comprendre les besoins en informations des membres est essentiel, mais indiquer l'usage et l'impact de ces bibliothèques n'a pas fait l'objet de beaucoup d'intérêt jusqu'ici. Cet article étudie l'exemple particulier de la bibliothèque de la Chambre des Lords au Royaume-Uni. Il rassemble et analyse des données en utilisant des techniques du domaine des sciences des données. Ces techniques sont utiles pour extraire des informations de sources existantes qui n'ont pas été nécessairement conçues dans un but de collecte des données. Diverses sources de données disponibles à la bibliothèque de la Chambre des Lords sont exposées et l'article donne un exemple de la façon dont ces données peuvent être utilisées pour comprendre l'usage et l'impact de la bibliothèque. Les résultats suggèrent que l'usage par les Membres de la Chambre varie de façon significative et qu'il y a peu de rapport entre cet usage et les discours prononcés à la Chambre. D'autres travaux devraient s'intéresser à d'autres indicateurs d'impact, mais ces méthodes s'annoncent prometteuses pour la création d'indicateurs pour les bibliothèques, particulièrement dans un cadre parlementaire.

Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession

[Évolution des pratiques et identité professionnelle: comment les nouvelles méthodes de travail peuvent redéfinir notre profession et notre façon de l'exercer]

Melissa Ann Fraser-Arnott

IFLA Journal, 114-126, 114-126

Résumé :

Les identités professionnelles nous offrent une optique pour nous comprendre nous-mêmes et comprendre notre communauté professionnelle. Au niveau individuel, les praticiens constatent que l'évolution de leur propre identité professionnelle les conduit à redéfinir leur profession, et ceux qui intègrent de nouveaux types de fonctions ou s'engagent dans de nouvelles tâches peuvent vouloir modifier l'orientation de leur profession dans son ensemble. En se basant sur l'expérience de diplômés en SIB employés à des fonctions non-bibliothécaires, cet article a pour premier objectif de donner une idée de la façon dont se développe une identité professionnelle et dont l'émergence d'une approche nouvelle ou inédite de la profession des SIB basée sur des expériences professionnelles dans des fonctions non-traditionnelles peut être considérée aussi bien comme une opportunité que comme une menace pour cette profession. Le second objectif est de convertir les expériences de ces diplômés qui travaillent dans des fonctions non-traditionnelles en recommandations, afin de promouvoir la diversité dans la façon de définir la profession des SIB.

Factors for adoption of OSILS in university libraries of Bangladesh

[Facteurs pour l'adoption de systèmes de gestion de bibliothèques en open source dans les bibliothèques universitaires du Bangladesh]

Md. Jahangir Alam, Muhammad Mezbah-ul-Islam

IFLA Journal, 45-2, 127-139

Résumé :

Cette étude identifie les facteurs influençant l'adoption de systèmes de gestion de bibliothèques (SGB) en Open Source dans les bibliothèques universitaires du Bangladesh. L'étude a été menée auprès de 196 professionnels de 14 bibliothèques privées et 7 bibliothèques universitaires publiques par le biais d'un questionnaire structuré conçu avec soin, en tenant compte de particularités locales suite à une étude pilote. Les facteurs en faveur de l'adoption de SGB en open source ont été analysés par régressions multiples, en utilisant la satisfaction globale comme variable dépendante, et 14 facteurs pour l'adoption de tels systèmes ont été utilisés comme variables indépendantes. L'ensemble du modèle de l'analyse de régression a été établi pour être représentatif et

révèle que rentabilité, code source ouvert, soutien de la communauté, systèmes de sauvegarde et de restauration des données, facilité d'intégration à d'autres logiciels ainsi qu'absence de contraintes en matière de licence, ont incité les professionnels des bibliothèques à adopter les SGB en open source. En outre, pour la première fois, un effort a été fait afin d'évaluer les facteurs significatifs pour l'adoption de ces systèmes dans les bibliothèques universitaires du Bangladesh, ce qui devrait inciter à des études futures sur les SGB en open source.

Information Seeking Behaviour of Undergraduate Students: A Developing Country Perspective

[Comportement de recherche d'information des étudiants de premier cycle: la perspective d'un pays en développement]

Md. Anwarul Islam, Ahmadul Islam Howlader

IFLA Journal, 45-2, 140-156

Résumé :

Cet article a pour objet d'étudier le comportement de recherche d'informations des étudiants de premier cycle de l'université de Dhaka au Bangladesh. Des questionnaires ont été distribués aux étudiants et les données ont été collectées sur une période de soixante jours entre novembre et décembre 2017. 450 questionnaires ont été distribués et 339 retournés, le taux de participation étant de 75,33%. On a constaté que la plupart des étudiants de premier cycle ont besoin d'informations académiques et d'informations sur des emplois. Pour satisfaire ces besoins, ils se rendent souvent à la bibliothèque afin d'étudier et de se préparer à des concours professionnels. Pour les travaux universitaires, ils dépendent fortement des cours et sont modérément satisfaits des services bibliothécaires dont ils disposent. Cette étude a permis de constater que les étudiants de premier cycle ont de faibles aptitudes en matière d'acquisition des informations et qu'ils ne sont pas au courant des ressources bibliothécaires. Le résultat de cette étude devrait aider à développer des ressources et services d'information s'adressant aux étudiants de premier cycle des pays en développement.

Status of secondary school libraries and librarians in Bangladesh

[Situation des bibliothèques et bibliothécaires de l'enseignement secondaire au Bangladesh]

Zakir Hossain

IFLA Journal, 45-2, 157-167

Résumé :

Cet article porte sur l'environnement actuel des bibliothèques et bibliothécaires de l'enseignement secondaire au Bangladesh. Pour ce faire, une étude exploratoire à méthodologie mixte a été menée afin de garantir les meilleurs résultats possibles. Dans la phase qualitative, en plus des examens de documents, cinq bibliothécaires scolaires ont été interrogés. En se basant sur les résultats de la phase qualitative, un questionnaire a été mis au point pour la phase quantitative et a permis de recueillir 87 réactions par les biais d'une enquête en ligne. Globalement, on

constate que le développement des bibliothèques et la formation de bibliothécaires qualifiés pour les bibliothèques scolaires sont lents en l'absence d'initiatives gouvernementales et non-gouvernementales. Là où existent des bibliothèques scolaires, les services et équipements sont réduits au minimum; les bibliothécaires scolaires ne sont pas impliqués dans le processus d'enseignement et d'apprentissage. Enfin, la bibliothèque scolaire est considérée comme moins importante que d'autres priorités dans le cadre du système national d'éducation et du budget annuel, et les problèmes et défis en résultant sont par conséquent un thème essentiel et une véritable problématique.

Zusammenfassung

**Changing Greek libraries: a continuous dialogue
(Der Wandel griechischer Bibliotheken - ein
anhaltender Dialog)**

Giorgios Glossiotis, Evgenia Vassilakaki, Eva Semertzaki

IFLA-Journal, 45-2, 69-80

Abstrakt:

Im Bereich der radikalen sozioökonomisch-technologischen Entwicklungen vollziehen sich in Bezug auf Bibliotheken und Informationswissenschaften in Griechenland zurzeit zahlreiche Veränderungen in einer dialektischen Beziehung zu technologischen Veränderungen. Bibliotheken in Griechenland haben eine lange Tradition, von der Akademie von Platon und dem Lyzeum von Aristoteles im 5. Jahrhundert v. Chr. bis zum Wandel der Nationalbibliothek von Griechenland im Stavros Niarchos Foundation Cultural Center. Diese Arbeit bietet einen Überblick und eine Auflistung aller Meilensteine, die den Anfang der Veränderungen markieren, welche sich in jedem Bereich der griechischen LIS-Landschaft vollziehen. Darüber hinaus werden die Veränderungen von Partnerschaften, Netzwerken, neuen Gebäuden und die Rolle der LIS-Bildung sowie lebenslanges Lernen behandelt.

**Impact of tailor-made information literacy
provision on rural dwellers participation in
sustainable development targets in Nigeria:
Implications for public library services to oral
societies**

**(Bedeutung der Verfügbarmachung
maßgeschneiderter Informationskompetenz für**

**die Partizipation von Bewohnern ländlicher
Gebiete an nachhaltigen Entwicklungszielen in
Nigeria: Implikationen für öffentliche
Bibliotheksdienste bei Gesellschaften mit oraler
Tradition)**

Chimezie P Uzuegbu

IFLA-Journal, 45-2, 81-103

Abstrakt:

Diese Arbeit hat die Bedeutung der Verfügbarmachung maßgeschneiderter Informationskompetenz für die Partizipation von Bewohnern ländlicher Gebiete in Nigeria an drei nachhaltigen Entwicklungszielen untersucht. Zur Sammlung von Daten, die die fünf Forschungsfragen beantworteten, wurden mehrere Forschungsmethoden eingesetzt, und zwar das Feldexperiment, Besuche vor Ort und die Fokusgruppenmethode. Die Ergebnisse zeigten, dass Bewohner ländlicher Gebiete, die Zugang zu Informationskompetenz erhalten hatten, mehr an nachhaltigen Entwicklungszielen partizipierten als Bewohner, die sich ausschließlich auf die ihnen zugänglichen vorhandenen Informationskommunikationssysteme stützten. Die Verfügbarmachung von Informationskompetenz für zwanzig Haushalte hatte einen Ölfleck-Effekt für das Verhalten von nicht mit Informationskompetenz ausgestatteten Haushalten im gleichen Dorf. Zusammenfassend haben die in dieser Studie verwendeten drei Methoden nachgewiesen, dass die effektive Partizipation von Bewohnern ländlicher Regionen an Entwicklungsprogrammen durch die Verfügbarmachung kontextbezogener Informationskompetenz erreicht werden kann. Die Implikationen wurden in einem Modell anschaulich dargestellt. Öffentliche Bibliotheken in Nigeria und in vergleichbaren Entwicklungsländern können sich die in dem Modell dargestellte Strategie zunutze machen, um

ihren Bewohnern ländlicher Regionen effektive Unterstützungsdienste zu bieten.

Usage and impact metrics for Parliamentary libraries

(Kennzahlen zur Nutzung und Bedeutung von Parlamentsbibliotheken)

Tarek Al Baghal

IFLA-Journal, 45-2, 104-113

Abstrakt:

Parlamentsbibliotheken sind wegen ihrer unterstützenden Rolle bei Entscheidungsfindungsprozessen in Demokratien unverzichtbar. Den Informationsbedarf der Mitglieder zu verstehen ist natürlich wichtig, doch die Nutzung und die Bedeutung dieser Bibliotheken wurden bislang wenig untersucht. Für diese Arbeit wurde ein besonderes Beispiel der britischen House of Lords Library untersucht. Die Erhebung und Analyse von Daten erfolgte dabei mithilfe von Techniken aus der Datenwissenschaft. Diese Techniken sind bei der Gewinnung von Informationen aus vorhandenen Quellen nützlich, die nicht unbedingt für den Zweck der Datenerhebung vorgesehen sind. In dieser Arbeit werden mehrere in der Lords Library vorhandene Datenquellen dargestellt und es werden Möglichkeiten präsentiert, wie diese Daten dazu verwendet werden können, die Nutzung und Bedeutung der Bibliothek zu verstehen. Aus den Ergebnissen zeigte sich, dass die Mitglieder die Bibliothek sehr unterschiedlich nutzen und es nur einen schwachen Zusammenhang mit der Erstellung von Reden für das Parlament gibt. Weitere Studien sind notwendig, um andere Indikatoren für die Bedeutung herauszustellen. Dieser Ansatz ist jedoch vielversprechend für die Erstellung von Kennzahlen für Bibliotheken, besonders im Bereich von Parlamentsbibliotheken.

Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession

(Entwicklung von Arbeitsweisen und professionelle Identität: Wie neue Arbeitsweisen unseren Berufsalltag und unsere Branche umformen)

Melissa Ann Fraser-Arnott

IFLA-Journal, 45-2, 114-126

Abstrakt:

Professionelle Identitäten bieten eine Brille, durch die wir uns selbst und unseren Berufsstand sehen und

verstehen können. Der Einzelne kann zu dem Schluss kommen, dass Veränderungen seiner eigenen professionellen Identität eine Neudefinition seines Berufs notwendig machen, und diejenigen, die neue Rollen oder neue Aufgaben übernehmen, streben möglicherweise danach, die Ausrichtung des Berufsstands insgesamt verändern zu wollen. Das vorrangige Ziel dieser Arbeit ist es, einen Einblick in die Art und Weise zu vermitteln, wie sich die Entwicklung der professionellen Identität vollzieht und wie das Entstehen einer neuen oder unüblichen Auffassung über den Berufsstand von Bibliothekaren und Informationswissenschaftlern (LIS) auf der Basis professioneller Erfahrungen in nicht-traditionellen Rollen durch die Brille der Erfahrungen von LIS-Absolventen, die in nicht-bibliotheksbezogenen Rollen tätig sind, gleichermaßen als Chance und Gefahr für den LIS-Berufsstand gelten kann. Zweites Ziel ist die Umsetzung der Erfahrungen der LIS-Absolventen, die in nicht bibliotheksbezogenen Rollen tätig sind, in Empfehlungen zur Förderung der Diversität in der Definition des LIS-Berufsfelds.

Factors for adoption of OSILS in university libraries of Bangladesh

(Faktoren für die Einführung von OSILS in Universitätsbibliotheken in Bangladesch)

Md. Jahangir Alam, Muhammad Mezbah-ul-Islam

IFLA-Journal, 45-2, 127-139

Abstrakt:

Diese Studie hat die Einflussfaktoren für die Einführung von OSILS in Universitätsbibliotheken in Bangladesch definiert. Die Studie wurde bei 196 Bibliothekaren an 14 privaten und 7 öffentlichen Universitätsbibliotheken mittels eines strukturierten Fragebogens durchgeführt. Der Fragebogen wurde dazu nach einer Pilotbefragung sorgfältig an die jeweiligen lokalen Umstände angepasst. Die Faktoren für die Einführung von OSILS wurden mithilfe der multiplen Regression analysiert, wobei die allgemeine Zufriedenheit als abhängige Variable und vierzehn Faktoren für die Einführung von OSILS als unabhängige Variablen verwendet wurden. Das gesamte, auf Signifikanz ausgerichtete Modell der Regressionsanalyse ergab, dass Kosteneffektivität, Open-Source-Code, die Unterstützung der Community, Backup- und Restore-Systeme, einfache Integration in andere Software und Lizenzfreiheit die Bibliothekare signifikant bei Ihrer Entscheidung für die Einführung von OSILS beeinflusst haben. Darüber hinaus wurden zum ersten Mal Bemühungen zur Bewertung der signifikanten

Факторы для введения OSILS в университетские библиотеки в Бангладеш предприняты, которые будущие исследования к OSILS могут быть привлечены.

Information Seeking Behaviour of Undergraduate Students: A Developing Country Perspective

(Informationssuchverhalten von Bachelorstudenten: eine Perspektive für Entwicklungsländer)

Md. Anwarul Islam, Ahmadul Islam Howlader

IFLA-Journal, 45-2, 140-156

Abstrakt:

Mit dieser Studie sollte das Informationssuchverhalten von Bachelorstudenten der Universität von Dhaka, Bangladesch, untersucht werden. In einem Zeitraum von sechzig Tagen im November und Dezember 2017 wurden zuvor an Studenten verteilte Fragebögen eingesammelt. Mit 450 verteilten und 339 ausgefüllten Fragebögen lag die Rücklaufquote bei 75,33%. Aus den Antworten ergab sich, dass die meisten Bachelorstudenten akademische und jobbezogene Informationen benötigen. Auf der Suche nach Informationen für ihr Studium und als Vorbereitung auf die kompetitiven Einstellungstests begeben sie sich oft in die Bibliothek. Für ihre akademischen Tätigkeiten sind sie stark von Vorlesungen und Seminaren abhängig; die ihnen angebotenen Bibliotheksdienste halten sie für wenig zufriedenstellend. Diese Studie kam zu dem Schluss, dass die Bachelorstudenten über Informationskompetenzen verfügen und sie sich der Bibliotheksressourcen nicht bewusst sind. Das Ergebnis dieser Studie könnte zu einer Weiterentwicklung der Informationsressourcen und Dienstleistungen für Bachelorstudenten in Entwicklungsländern beitragen.

Status of secondary school libraries and librarians in Bangladesh

(Status der Bibliotheken und Bibliothekare an weiterführenden Schulen in Bangladesch)

Zakir Hossain

IFLA-Journal, 45-2, 157-167

Abstrakt:

Ziel dieser Studie war die Untersuchung des aktuellen Umfelds von Bibliotheken und Bibliothekaren (SSLs) an weiterführenden Schulen in Bangladesch. Um die bestmöglichen Ergebnisse der Studie zu erzielen, wurde ein exploratives Verfahren mit verschiedenen Methoden gewählt. In der qualitativen Phase wurden neben der Literaturforschung fünf Schulbibliothekare interviewt. Anhand der Ergebnisse der qualitativen Phase wurde ein Fragebogen für die quantitative Phase entwickelt. Mithilfe einer Online-Befragung haben 87 Respondenten den Fragebogen ausgefüllt. Generell war festzustellen, dass die Entwicklung von Bibliotheken und die Schulung qualifizierter Schulbibliothekare aufgrund fehlender staatlicher und nicht staatlicher Initiativen sehr schleppend verläuft. Wenn es überhaupt Schulbibliotheken gibt, sind die Dienstleistungen und die Ausstattung minimal. Schulbibliothekare werden nicht in den Unterrichts- und Lernprozess einbezogen. Die Schulbibliothek hat im Vergleich zu anderen Faktoren im Bildungssystem des Landes und dem Jahresbudget eine geringere Priorität. Die sich daraus ergebenden Probleme und Herausforderungen sind daher ein wichtiges Thema und ein signifikantes Problem.

Аннотация

Changing Greek libraries: a continuous dialogue

Перемены в библиотеках Греции: непрерывный диалог

Гиоргиос Глоссиотис, Евгения Вассилакаки, Ева Семертзаци

IFLA Journal, 45-2, 69-80

Аннотация:

В эпоху радикального социально-экономического и технологического развития сфера библиотечного дела и информатики Греции переживает череду перемен, находящихся в диалектической связи с

технологическими изменениями. Библиотеки Греции прошли долгий путь от Платоновской Академии и Ликейя Аристотеля в V веке до нашей эры и до трансформации Национальной библиотеки Греции в Культурный центр имени Ставроса Ниархоса. Задача настоящей работы заключается в представлении общего обзора и указании тех вех, которые знаменуют начало перемен, происходящих в каждом аспекте библиотековедения и науки об информации Греции. Кроме того, эта работа обращает внимание читателя на текущие перемены в партнерских отношениях и связях, на новые здания и на ту роль, которую играют обучение библиотекведению и науке об информации, а также непрерывное образование в течение всей жизни.

Impact of tailor-made information literacy provision on rural dwellers participation in sustainable development targets in Nigeria: Implications for public library services to oral societies

Влияние персонализированного подхода к обеспечению информационной грамотности на вовлеченность сельских жителей в процесс достижения целей устойчивого развития Нигерии: Значение с точки зрения оказания услуг публичными библиотеками в обществах без письменных традиций

Чимези П. Узугбу

IFLA Journal, 45-2, 81-103

Аннотация:

В рамках данной работы исследовалось влияние, которое оказывает персонализированный подход к обеспечению информационной грамотности на вовлеченность сельских жителей Нигерии в процесс достижения трех целей устойчивого развития. Для сбора информации, позволяющей получить ответы на пять вопросов, сформулированных в рамках настоящей работы, применялось исследование смешанного типа, включающее в себя полевой экспериментальный подход, выезд на место, а также работу с фокус-группами. Результаты исследования показали, что сельские жители, которым был предоставлен доступ к материалам, повышающим уровень информационной грамотности, принимали более активное участие в деятельности, направленной на достижение целей устойчивого развития, чем те, кто зависел исключительно от существующих доступных им информационно-коммуникационных систем. Обеспечение доступа к материалам из области информационной грамотности выборочно в двадцати домохозяйствах попутно оказало влияние и на поведение в пределах домохозяйств, не включенных в выборку в той же деревне. В заключение следует отметить, что триангуляция методов, примененная в рамках настоящего исследования, продемонстрировала, что за счет обеспечения доступа к соответствующим материалам из области информационной грамотности можно достичь эффективного участия сельских жителей в программах развития. На основании этого можно сделать выводы, которые преобразуются в модель. Публичные библиотеки в Нигерии и подобных ей развивающихся странах могут исследовать стратегию, заключенную в настоящей модели, чтобы начать оказывать эффективные индивидуальные услуги своим сельским жителям.

Usage and impact metrics for Parliamentary libraries

Показатели использования и влияния парламентских библиотек

Тарек Ал Багхал

IFLA Journal, 45-2, 104-113

Аннотация:

Парламентские библиотеки играют важную роль в поддержке принятия продуманных решений в демократических государствах. Большое значение имеет понимание информационных потребностей членов этих библиотек, при этом менее исследованными остаются сведения об использовании таких библиотек и об их влиянии. В настоящей работе рассматривается конкретный пример библиотеки Палаты лордов Великобритании; сбор и анализ данных производился с использованием методов из области математического и компьютерного моделирования. Эти методы позволяют извлекать информацию из существующих источников, которые, вероятно, не были предназначены для сбора данных. Указано несколько источников информации, доступных в библиотеке Палаты лордов, и приведен пример, как эти данные могут применяться для понимания того, как используется и какое влияние оказывает эта библиотека. На основании полученных результатов можно сделать вывод, что использование библиотеки ее членами существенно различается, и что связь между использованием библиотеки и произнесением речей в палате довольно слаба. Дальнейшие исследования позволят выявить иные показатели влияния, но эти методы раскрывают перспективы в области формирования критериев эффективности библиотек, в особенности в парламентской среде.

Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession

Эволюция деятельности и профессиональное самоопределение: Как новые методы в нашей работе могут изменять нас как профессионалов, равно как и нашу профессию

Мелисса Энн Фрейзер-Эрнотт

IFLA Journal, 45-2, 114-126

Аннотация:

Профессиональное самоопределение является своеобразной линзой, позволяющей понять себя

и свое профессиональное сообщество. Индивидуальные частнопрактикующие специалисты могут обнаружить, что изменение их личного профессионального самоопределения приводит к переоценке ими собственной профессии, и что те из них, кто примеряет к себе новые типы ролей или принимает за решение новых задач, могут стремиться к тому, чтобы в целом изменить направление выбранной профессии. Первая задача данной работы заключается в том, чтобы показать, как происходит развитие профессионального самоопределения, и как возникновение нового или непривычного взгляда на профессию специалиста в области библиотековедения и науки об информации, основанного на профессиональном опыте исполнения нетрадиционных ролей, может рассматриваться и как дополнительная возможность, и как опасность для профессии; в качестве линзы используется опыт выпускников учебных заведений по подготовке специалистов в области библиотековедения и науки об информации, выполняющих обязанности, не связанные с библиотекой. Второй задачей является преобразование опыта выпускников учебных заведений по подготовке специалистов в области библиотековедения и науки об информации, выполняющих непривычные функции, в рекомендации, направленные на содействие расширению понятия данной профессии.

Factors for adoption of OSILS in university libraries of Bangladesh

Предпосылки для внедрения АБИСОИК в университетских библиотеках Бангладеш

Мд. Джахангир Алам, Мухаммад Мезбах-уль-Ислам

IFLA Journal, 45-2, 127-139

Аннотация:

В данной работе устанавливаются факторы, оказывающие влияние на внедрение автоматизированной библиотечной информационной системы с открытым исходным кодом (АБИСОИК) в университетских библиотеках Бангладеш. Исследование было проведено среди 196-ти профессиональных работников библиотек из 14-ти частных и 7-ми публичных университетских библиотек при помощи структурированной анкеты, которая была тщательно адаптирована к местным условиям по результатам проведения предварительного сбора информации. Предпосылки для внедрения АБИСОИК анализировались посредством множественных регрессий, где в роли зависимой переменной выступало общее

удовлетворение, а в качестве независимых переменных использовались четырнадцать предпосылок для внедрения АБИСОИК. Вся модель регрессионного анализа была признана убедительной, и она продемонстрировала, что экономичность, открытый исходный код, поддержка сообщества, наличие систем резервного копирования и восстановления, простота интеграции с другим программным обеспечением, а также отсутствие лицензионных сборов оказывают существенное влияние на принятие профессиональными работниками библиотек решения о внедрении АБИСОИК. Более того, была впервые предпринята попытка оценить существенные предпосылки для внедрения АБИСОИК в библиотеках университетов Бангладеш, что будет стимулировать проведение дальнейшей исследовательской работы в области АБИСОИК.

Information Seeking Behaviour of Undergraduate Students: A Developing Country Perspective

Модели поведения студентов при поиске информации: Перспективы развивающейся страны

Мд. Ануарул Ислам, Ахмадул Ислам Хауладер

IFLA Journal, 45-2, 140-156

Аннотация:

Цель настоящего исследования заключается в изучении моделей поведения студентов программы бакалавриата Даккского университета Бангладеш при поиске информации. Среди студентов были распространены анкеты, и сбор сведений проходил в течение шестидесяти дней в период с ноября по декабрь 2017 года. Было роздано 450 анкет, а возвращено 339, и это означает, что доля ответивших составила 75,33%. Выяснилось, что большинству студентов необходима информация, связанная с обучением и работой. Для удовлетворения этой потребности они часто идут в библиотеку, чтобы учиться и готовиться к собеседованиям для устройства на работу на конкурсной основе. В рамках выполнения учебных заданий они в значительной степени зависят от классных лекций и едва ли удовлетворены услугами, которые им предоставляют библиотеки. Данное исследование позволяет сделать вывод о том, что навыки студентов в поиске информации слабы, и что они не осведомлены о ресурсах библиотек. Результаты настоящей работы могли бы содействовать развитию информационных ресурсов и услуг, предоставляемых студентам в развивающихся странах.

Status of secondary school libraries and librarians in Bangladesh

Состояние библиотек и библиотекарей средних школ в Бангладеш

Закир Хоссейн

IFLA Journal, 45-1, 157–167

Аннотация:

Задачей настоящего исследования является рассмотрение текущих условий существования и работы библиотек и библиотекарей средних школ в Бангладеш. Для достижения указанной цели был проведен исследовательский анализ с применением смешанных методов исследования для получения максимально достоверных результатов. На этапе качественного исследования помимо обзора литературы был проведен опрос пяти школьных библиотекарей. На основании результатов качественного исследования был разработан

опросный лист для количественной фазы, в ходе которой при помощи интернет-опроса было собрано 87 ответов. Обобщенные результаты показывают, что развитие библиотек и подготовка высококвалифицированных профессиональных работников библиотек осуществлялись невысокими темпами в связи с недостаточным количеством государственных и негосударственных инициатив. Существующие школьные библиотеки предлагают минимальное количество услуг и располагают крайне скудным объемом технических средств; школьные библиотекари не интегрированы в процесс преподавания и обучения. И наконец, школьная библиотека рассматривается как имеющая меньшее значение на фоне других первостепенных задач государственной системы образования и годового бюджета, и потому проблемы и задачи, являющиеся следствием текущего положения вещей, представляют собой важную тему и многозначительный вопрос.

Resúmenes

Changing Greek libraries: a continuous dialogue

(La transformación de las bibliotecas griegas: un diálogo continuo)

Giorgios Glossiotis, Evgenia Vassilakaki, Eva Semertzaki

IFLA Journal, 45-2, 69-80

Resumen:

En la era de los avances socio-económico-tecnológicos radicales, el sector de biblioteconomía y documentación en Grecia está atravesando una serie de cambios que guardan una relación dialéctica con los cambios tecnológicos. Las bibliotecas de Grecia tienen una gran tradición, desde la Academia de Platón y el Liceo de Aristóteles en el siglo V A.C. hasta la transición de la Biblioteca Nacional de Grecia en el Centro Cultural de la Fundación de Stavros Niarchos. Este artículo tiene por objeto ofrecer una visión de conjunto y registrar los hitos que significaron el inicio de los cambios que acontecieron en cada aspecto del panorama griego de la biblioteconomía y la documentación. Asimismo, pretende presentar los cambios en las asociaciones y las redes, edificios nuevos y la función de la educación y el aprendizaje permanente en el ámbito de la biblioteconomía y documentación.

Impact of tailor-made information literacy provision on rural dwellers participation in

sustainable development targets in Nigeria: Implications for public library services to oral societies

(Impacto de la alfabetización informacional adaptada en la participación de los habitantes rurales en los objetivos de desarrollo sostenible en Nigeria: implicaciones para las bibliotecas públicas de sociedades de tradición oral)

Chimezie P Uzuegbu

IFLA Journal, 45-2, 81-103

Resumen:

En este artículo se examina el impacto de la alfabetización informacional adaptada para la participación de los habitantes rurales nigerianos en tres objetivos de desarrollo sostenible. Para recoger las respuestas a las cinco preguntas planteadas en el estudio se utilizó un diseño de investigación de métodos combinados compuesto por un enfoque experimental sobre el terreno, visitas in situ y un grupo de interés. Según los resultados, los habitantes rurales que recibieron alfabetización informacional participaron más en los objetivos de desarrollo sostenible que sus homólogos que dependían de los sistemas de comunicación e información existentes que tenían a su alcance. La alfabetización informacional a una muestra de veinte familias tuvo un efecto dominó sobre la conducta de las familias de la misma aldea que no se incluyeron en el muestreo. En conclusión, la triangulación de los

métodos utilizados en este estudio demostró que la participación efectiva de los habitantes rurales en los programas de desarrollo se puede lograr a través de la alfabetización informacional contextual. Esto comporta implicaciones que se resumen en un modelo. Las bibliotecas públicas de Nigeria y de países en desarrollo similares pueden explorar la estrategia contenida en el modelo para lanzar servicios de extensión eficaces destinados a los habitantes rurales.

Usage and impact metrics for Parliamentary libraries

(Indicadores de uso e impacto para las bibliotecas parlamentarias)

Tarek Al Baghal

IFLA Journal, 45-2, 104-113

Resumen:

Las bibliotecas parlamentarias son importantes para respaldar la toma de decisiones bien fundadas en las democracias. Es importante comprender las necesidades de información de los diputados, pero se ha indagado menos en el ámbito del uso y el impacto de estas bibliotecas. Se estudia un ejemplo concreto de la biblioteca de la Cámara de los Lores del Reino Unido, en el que se recogen y analizan datos utilizando técnicas procedentes de la ciencia de los datos. Estas técnicas resultan útiles para extraer información de fuentes existentes que puede que no hayan sido diseñadas para la recogida de datos. Se describe una serie de fuentes de datos disponibles en la biblioteca de la Cámara de los Lores y se presenta un ejemplo de cómo se pueden usar estos datos para comprender el uso y el impacto de la biblioteca. Los resultados indican que el uso que los diputados hacen de la biblioteca varía en gran medida y que existe una débil relación entre el uso de la biblioteca y las intervenciones en la cámara. Deben analizarse con mayor profundidad otros indicadores de impacto, pero estos métodos resultan prometedores para la creación de indicadores, especialmente en contextos parlamentarios.

Evolving practices and professional identity: How the new ways we work can reshape us as professionals and a profession

(Evolución de las prácticas y de la identidad profesional: cómo contribuyen los nuevos métodos de trabajo a reconfigurar la profesión y a los profesionales)

Melissa Ann Fraser-Arnott

IFLA Journal, 45-2, 114-126

Resumen:

Las identidades profesionales proporcionan una lente a través de la que nos entendemos a nosotros mismos y a nuestra comunidad profesional. Los profesionales independientes pueden encontrarse con que los cambios en sus identidades profesionales les obligan a redefinir su profesión y a los que adoptan nuevos tipos de roles o se embarcan en tareas nuevas puede que les resulte difícil modificar el rumbo de la profesión en su conjunto. El primer objetivo de este artículo es ofrecer información sobre cómo se desarrolla la identidad profesional y sobre cómo la aparición de una perspectiva nueva o inusual de la profesión de biblioteconomía y documentación (ByD) basada en las experiencias de profesionales que desempeñan roles no tradicionales puede contemplarse como una oportunidad y como una amenaza para la profesión de ByD utilizando como lente la experiencia de licenciados en ByD que desempeñan roles al margen de las bibliotecas. El segundo objetivo es traducir las experiencias de los licenciados en ByD que desempeñan roles no tradicionales en recomendaciones para promover la diversidad en la definición de la profesión de ByD.

Factors for adoption of OSILS in university libraries of Bangladesh

(Factores para la adopción de OSILS en las bibliotecas universitarias de Bangladesh)

Md. Jahangir Alam, Muhammad Mezbah-ul-Islam

IFLA Journal, 45-2, 127-139

Resumen:

El estudio identificó los factores determinantes para la adopción de OSILS en las bibliotecas universitarias de Bangladesh. Se realizó una encuesta entre 196 bibliotecarios procedentes de 14 bibliotecas universitarias privadas y 7 públicas a través de un cuestionario estructurado que se adaptó cuidadosamente en función de los acuerdos locales después de realizar una encuesta piloto. Los factores para la adopción de OSILS se analizaron mediante regresiones múltiples en las que la satisfacción global se utilizó como variable dependiente, y catorce factores para la adopción de OSILS se utilizaron como variables independientes. Se determinó que el modelo completo de análisis de regresión era significativo y los resultados demostraron que la rentabilidad, el código abierto, el apoyo a la comunidad, los sistemas de copia de seguridad y restauración, la facilidad de integración con

otro software y la ausencia de un canon de licencia eran factores que influían en estos profesionales a la hora de adoptar OSILS. Además, por primera vez se ha hecho un esfuerzo por evaluar los factores determinantes para la adopción de OSILS en las bibliotecas universitarias de Bangladesh que impulsarán la investigación futura sobre OSILS.

Information Seeking Behaviour of Undergraduate Students: A Developing Country Perspective

(Conducta de búsqueda de información de estudiantes de diplomatura: perspectiva de un país en desarrollo)

Md. Anwarul Islam, Ahmadul Islam Howlader

IFLA Journal, 45-2, 140-156

Resumen:

El objetivo de este estudio es investigar la conducta de búsqueda de información de los estudiantes de diplomatura en la Universidad de Dhaka (Bangladesh). Se distribuyeron cuestionarios a los estudiantes y se recogieron datos durante un período de sesenta días, entre noviembre y diciembre de 2017. Se repartieron 450 cuestionarios y se devolvieron 339, por lo que la tasa de respuesta fue del 75,33%. Los resultados revelaron que la mayoría de los estudiantes de diplomatura necesitan información académica y relacionada con el trabajo. Para satisfacer estas necesidades, suelen acudir a la biblioteca para estudiar y prepararse para los exámenes. Para la realización de trabajos académicos, dependen en gran medida de las clases y están ligeramente satisfechos con los servicios que ofrecen la biblioteca. Según los resultados de este estudio, las competencias en materia de información de los estudiantes de diplomatura eran deficientes y estos no conocían los recursos bibliotecarios. El resultado de este

estudio ayudaría a desarrollar recursos y servicios de información para los estudiantes de diplomatura de países en desarrollo.

Status of secondary school libraries and librarians in Bangladesh

(Estado de las bibliotecas y de los bibliotecarios de institutos de enseñanza secundaria en Bangladesh)

Zakir Hossain

IFLA Journal, 45-2, 157-167

Resumen:

El propósito de este estudio es explorar el entorno actual de las bibliotecas y de los bibliotecarios de los institutos de enseñanza secundaria (IES) de Bangladesh. Para lograr dicho objetivo, se aplicaron métodos combinados a fin de garantizar los mejores resultados posibles. En la fase cualitativa, además de la revisión bibliográfica, se hizo una entrevista a cinco bibliotecarios. Sobre la base de los resultados de la fase cualitativa, se diseñó un cuestionario para la fase cuantitativa y se recogieron 87 respuestas a través de una encuesta online. Según los resultados, el desarrollo de las bibliotecas y la formación de profesionales de bibliotecas de IES cualificados han sido lentos debido a la falta de iniciativas gubernamentales y no gubernamentales. Los servicios y las instalaciones de las bibliotecas de IES que existen son mínimos; los bibliotecarios de IES no están integrados en el proceso de enseñanza y aprendizaje. Por último, a las bibliotecas de IES se les concede menos importancia que a otras prioridades en el sistema educativo y el presupuesto anual del país, y los problemas y los retos resultantes son, por tanto, un tema importante.

