# Use of Electronic Information Resources in a Special Library in Ethiopia

Abstract

The study was undertaken to investigate the utilisation of electronic information resources of the UNECA library in Addis Ababa Ethiopia and the challenges faced by the different users. A quantitative research method with a sample survey research design was applied. A population of 600 users, of which 500 were internal users (UNECA and United Nations agencies staff members) and 100 were external users (researchers, students, or non-staff members). 20% from each category was taken as a sample. An online questionnaire was distributed through email to collect data. The total response rate was 74%. The results showed that 92% of the respondents were aware of the availability of the electronic resources of the Library. 94% found the electronic resources useful. 84% confirmed that the resources were easy to use. High numbers of the respondents positively agreed that the quality of their outputs and performances have improved as a result of these resources. The challenges associated with the resources include information overload, access restriction with IP address, lack of training and remembering login credentials. 68% reported that the library services met their expectations. The study recommends the development of strategies for enhancing accessibility and discoverability of the resources, providing information literacy trainings for all users, and finding alternative measures for IP restriction access.

**Keywords**: electronic information resources, special library, Ethiopia, UNECA, information behaviour

## Introduction

The world is changing and becoming predominantly digital in all aspects. Libraries are part of this change – they are operating in the digital era, and are compelled to deploy electronic information resources that serve users more than ever before. The demands, expectations and requirements of libraries are changing as they struggle to cope with the changes that are occurring in the wider society (Patra 2017). As part of this global change, the United Nations Economic Commission for Africa (UNECA) Library has been using electronic information resources to serve its users.

When information is stored in, and accessed through a digital format, such information can be considered as an electronic resource. Many libraries contain electronic resources which are accessible digitally within the library or remotely. According to Haridasan & Khan (2009), electronic information resources are "… resources in which information is stored electronically and which are accessible through electronic systems and networks". The resources include: journals in electronic formats, e-dissertations e-conference proceedings, e-books and other resources stored and accessed digitally. Electronic information resources are also denoted as "e-resources", "digital resources" or "digital collections" (Patra 2017).

These digital information resources are easy to search and retrieve and are able to serve many users seamlessly. Patra (2017) has shown that libraries have begun to increase their budget to acquire digital information resources as they have proved to be more beneficial in creating convenient access and easy retrieval of information; digital technologies support relative comprehensiveness of information items of interest, simultaneous accessibility by multiple users

and online browsing and improved searching. Searching could be by keyword and other devices, all of which saves time, increases work productivity and make knowledge sharing simpler. Dadzie (2005) highlighted that convenience to access any information from anywhere, at any time, without visiting a library are a significant advantage of using electronic information resources. Staff members of UNECA and other library users have the opportunity to use the library resources from their offices or anywhere. Users of the library deserve adequate and latest information regarding the services and products of electronic information resources relevant to their interest and area of work. The UNECA Library recognizes the value of electronic information resources and has been acquiring electronic information resources for its clients.

The digital era has altered the information-seeking behaviors of users. Das & Achary (2014) stated that in order to satisfy the changes in the way users seek information and their information needs, libraries are changing the way they undertake collections, and they are more concerned with the quality and relevance of the electronic information resources they subscribe to or acquire. However, just knowing what electronic resources available in a library is not sufficient. However, the usefulness of these resources depends on the awareness of users of the resources as well as the skills required to search, identify, access and use them. The degree to which the users know the existence and availability of electronic information resources is essential. Adeleke & Nwalo (2017) acknowledge the importance of awareness, as this will encourage users to appreciate and use electronic information resources more frequently. Creating awareness is seen to be a crucial aspect to encourage the utilization of electronic sources.

UNECA Library is a special Library, a type of library described by Ard & Livingston (2014) as "…created by businesses, associations or even government agencies to support the information needs and work of the organization". The UNECA Library, is intended to catalyze the effectiveness of UNECA by providing staff members with reliable access to high-quality information resources and services (UNECA 2019). In order for UNECA staff members to conduct multi-sectoral research and analysis, they need to use electronic information resources. There is a link between using electronic information resources and enhanced performance. Olanrewaju (2019) affirmed that using electronic information resources supported critical aspects of users' academic work, provided greater access, and enhanced performance. To identify, discover and use e-resources, greater level of awareness about the resources and information literacy skills are required.

**Objectives of the study**
The objectives of this article are to:
- investigate the of electronic information resources in the UNECA library;
- determine the perceived usefulness of the electronic information resources in by the UNECA library are;
- determine the perceived ease of use of the electronic information resources provided by the UNECA library;
- examine the factors that affect the utilisation and access of electronic information resources in the UNECA library;
- make recommendations to enhance access and utilisation of UNECA library electronic information resources.

**Theoretical Framework**
There are different models that have been developed by researchers in relation to information

seeking behavior. In this study two models, namely Wilsons model and Technology Acceptance Model.

**Wilson's Models of Information Behaviour Research**
Wilson has developed models to study information seeking behavours. These are Wilson's 1981 and Wilson's 1996 (Wilson 1999). Wilson's model forms a conceptual framework that highlighted the need to study information seeking behavior (Al-Suqri 2011). Wilson's model of 1981 suggested that when there is an information demand to satisfy, an information user starts to seek information and this is where the information seeking behavior begins. The demand and search might be successful or unsuccessful after searching with formal information system sources or other sources. However, the search continues until the perceived need is fully or partially satisfied (Wilson 1999). The 1981 Wilson's model was later revised in 1999. Information seeking behavior consists of the active search, as well as information processing and use (Wilson 1999). The model included barriers for information seeking behavours as intervening variables; it also included activating mechanism encompassing stress/coping theory, risk/ reward theory, and social learning theory.

**Technology Acceptance Model**
In 1989, Fred Davis developed a theory known as Technology Acceptance Model (TAM). This theory explained how perceived usefulness and perceived ease of use of new technology determine information and communication technologies usage (Davis 1989). Technology Acceptance Model (TAM) is a model that is used to explain factors that determine attitude towards using newly introduced systems and their impacts on their acceptance (Adeoye & Olanrewaju 2019). Technology Acceptance Model (TAM) examines the factors affecting users towards the decision to use new technology (Durodolu 2016).

In the field of library and information science, Technology Acceptance Model (TAM) is popular in assessing and demonstrating factors affecting applying a new technology (Adeoye & Olanrewaju 2019; Ani 2013; Mardis, Hoffman & Marsha 2008). The two most important variables of the Technology Acceptance Model (TAM) are, "Perceived Usefulness" (PU) and "Perceived Ease of Use" (PEOU) (Davis 1989). The two variables are defined as follow: PU is "the degree to which a person believes that using a particular system would enhance his or her job performance". Whereas PEOU is "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). According to Adeoye and Olanrewaju (2019), using a new technology or an application depends on the impact it has on performance or the effort required to perform an action. In relation with this study, users can decide to use electronic information resources or not by weighing the benefit to enhance their performance or access all the information they needed with less effort. The relationships between performance and the use of ICT can be explained by the concept of perceived usefulness. If a person perceived that the use of information system contributes to a better performance, they tend to prefer and use it.

Adeoye and Olanrewaju (2019) applied TAM in their study to evaluate how Lead City University's library, in Ibadan, Nigeria, use of electronic information resources. The results of their study show that students perceived the usefulness of electronic information resources for their academic tasks to be positive. According to the study by Adeoye and Olanrewaju (2019), users tend to use electronic information resources because they perceived it to be user friendly as compared to other library resources in order to obtain the relevant information to their job or study.

The second variable in TAM is Perceived ease-of-use (PEOU). Ease is defined as "freedom from difficult or great effort" and PEOU is "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). There is a link and preference by users between use and easiness. Davis (1989) conducted a study to compare the usefulness-usage relationship with the ease of use-usage relationship. According to Davis (1989), the study proved that usefulness was significantly linked to usage than ease of use. In other words, users tend to use technology more when they think it is more useful than it is easier.

In relation to the ease of use, the study by Adeoye and Olanrewaju (2019) confirms that users find it effortless or easy to search and retrieve information from the electronic information resources provided by their library. Mardis, Hoffman and Marsha (2008) examine theoretical models and frameworks like TAM to understand ICT adoptions and their use in schools. Ani (2013) applied Technology Acceptance Model to study the link and connection between accessibility and utilization of e-resources and recommended increased investment in ICT facilities in the surveyed universities to promote increase in accessibility and utilization. Technology Acceptance Model further embraces the impact of external variables that affect the attitude towards its use. The external variables are principals of the attitudes towards the use and usage of technology (Durodolu 2016). These external variables refer to the quality that is outside of an individual, for example, training, computer experience, quality of systems (Durodolu 2016).

## Literature Review

### Special Library
According to Murray (2013), a special library is "any library that doesn't fall into the academic, public, or school categories, or any library with a specialized collection or "…a special library is not a separate entity, but 'exists as an integral part of a highly specialized kind of organisation whether it be an industrial corporation, research, or service institution, a trade association, a government agency or a museum" (Murray 2013). Special libraries identify, collect, analyse, organise, and disseminate information exactly the same way as other libraries. The services provided, common skills required, challenges and problems they encounter; impacts of technology are the same as academic or public libraries. Special libraries share concerns with more general academic, public, and school counterparts as they all provide information resources to meet peoples' needs. However, special libraries have unique characteristics that relate to the complexity of the communities they serve. Special libraries can therefore learn from the general literature on libraries. Practitioners in general libraries can also learn from the experiences and methods of special libraries (Ard & Livingston 2014). Weaver (2012) listed some of the features of special libraries. The features are its special collection, the customer it serves, size and the heterogeneity of the community. Weaver (2012) also said that the customers of special libraries target the organization more than individuals outside.

### Electronic Information Resources
The practice of using electronic information resources in libraries started in the mid 1960's with the emergence of the Machine-Readable Cataloguing (MARC) (Hawthorne 2008). Around the same time, libraries provided the bibliographic databases. In the 1970's, libraries started to have access to data sets. Then, in the in the 1980's, with the acquisitions of data on diskettes and software by libraries, electronic information services started by providing databases with full text

in CD-ROMs to the users (Hawthorne 2008). The emergence of World Wide Web, in the mid-1990s, resulted with an improved electronic information services provided by libraries to their clients. According to Hawthorne (2008), following World Wide Web, services like full-text databases, bibliographies, electronic journals, Web-based catalogs, electronic serials, and electronic books were available to users. Some of the challenges for using the databases during the 1980' and 1990's were difficulties in identifying and locating relevant resources, having different interface, moving searches from one source to another, and high cost of e-books reader (Hawthorne 2008). Since then, the emergence of electronic information resources highly increased in volume and demanded a mechanism to manage.

In the early 2000s, electronic information resources management systems (ERMS) was introduced to expand information sharing and keep track of the full life-cycle of electronic holdings (Verminski & Blanchat 2017). The life cycle for identifying, acquiring, processing, and managing electronic information resources is different and time consuming for librarians when it is compared with print collection. Verminski and Blanchat (2017) described the process for print resources as once purchased, claimed, processed, and ready to be used by users. On the other hand, electronic information resources have nonlinear, repetitive, and ongoing lifecycle. There are different terms used interchangeably with electronic information resources. To mention some of them are electronic resource, digital resource, digital collection, e-resources and electronic information resources can be anything that is not printed, and available in an electronic format, including CD-ROMs. For the purpose of this study, electronic information resources refer to the subscribed journals and databases that are listed on the UNECA library website. This includes the Institutional Repository (IR) of UNECA, e-books, e-journals, statistical databases, as well as additional online resources; such as, a portal known as Access to Scientific and Socio-Economic Knowledge in Africa (ASKIA), and electronic or digital UN regional resources. These resources have been selected and subscribed to by the librarians and are available and accessible on the library's website.

**Use and Access of Electronic Information Resources**
Convenience, ease of accessibility, unlimited and unrestricted time or location, and saving of physical spaces pushed libraries and users to shift towards the electronic information resources. Electronic information resources could be any information that is not in a printed format but available in digital formats, that can be accessible through the internet, from CD-ROMs, databases, digitally born e-books, e-magazines, e-journals, and any resource available electronically. Libraries have started to scan and digitise their print collections so that users can access digital formats of the resources as they understand the benefits of electronic information resources. Studies show that libraries also shifted to buy more electronic information resources because of their benefits. Adeleke and Nwalo (2017) highlighted that due to the impact of ICT on libraries, there was a push to acquire and provide services using these electronic information resources.

In view of the benefits, importance, and increasing use of electronic information resources in libraries; many researchers have studied and examined the extent and pattern of use of electronic information resources in libraries (Adeoye & Olanrewaju 2019; Adeleke & Nwalo 2017. These studies indicated that libraries are acquiring more electronic information resources for the benefits of easy access to information, comprehensiveness, getting authoritative and reliable information on a timely manner, accuracy, accessibility and convenience.

Information seeking behavior of users have changed through time to search and get access to a large volume of information to meet users' information need. Electronic information resources

can be searched and found through freely available sources from the internet like searching google or through a library subscription to get scholarly reviewed and authenticated resources. According to Appleton (2006), internet resources are categorized as 'freely available' and 'scholarly resources'. Addisalem (2016) studied Unisa postgraduate students located in Ethiopia regarding their utilization of electronic information resources. This study highlighted that electronic information resources were preferred for ease of access, availability, and accessibility. This study indicated that the respondents were using both printed and electronic information sources.

However, the study demonstrated that most of the respondents agreed that easiness, accessibility and availability, handiness, up-to-date, trustworthiness, and appropriateness of electronic information resources were reasons why majority of respondents preferred to access and use electronic information resources. The option of getting different formats of information resources, accessing fast, reliable and wide range of information resources, having unlimited and multiple access to information without geographical restrictions in a short period of time were the advantages opinionated by four different university students of Karnataka state (Hadagali, Kumbar, Nelogal & Bachalapur 2012).

A study conducted by Adeoye and Olanrewaju (2019) regarding Lead City University Library's use of electronic information resources, indicated that the electronic resources were useful and easy to use for any academic task as the resources were flexible in terms of searching for information as compared to paper-based resources. Moreover, these resources are accessible from anywhere and at any convenient time. They also indicated that electronic information resources can be easily used to obtain the required information. According to this study 74% of the respondents positively affirmed the use of electronic information resources and how they eased their job. The respondents mentioned that their job would be difficult to perform without library electronic information resources Adeoye and Olanrewaju (2019). Dadzie (2005) showed that to access information without any geographical and physical location restrictions, to get current and latest information, to explore additional resources and extensive links, electronic information resources are vital research tools. The study by Dadzie (2005) highlighted users' preference to electronic information resources at which the findings reported convenience in accessing information from anywhere, at any time without visiting the library. The study discovered that the first attempt of finding information is through internet, using electronic information resources.

When libraries introduced web-based services for instance, e-books and e-journals in the1990s, and since then, accessibility of electronic information resources was well received by library users and they should not go to any library to do their research (Hawthorne 2008). Larson (2017) discussed the importance of electronic information resources and studied the level of awareness, as well as usage of these resources. Saving time, increase productivity and sharing information easily were some of the benefits of using electronic information resources (Patra 2017). Using electronic information resources is flexible and more accessible because searching and accessing the same information from the same source by multiple users at the same time is possible; it is also possible to search using simple keywords, it is possible to play around and search through various search engines; it is possible to search, browsing, scanning, retrieve online (Patra 2017).

Ekwelem, Okafor & Ukwoma (2009) studied the increase use of technology and EIS in everyday life and found that most users are familiar with EIS as a traditional collection. The frequency of using this particular electronic resource is higher, as it is found to be simple to utilize for obtaining relevant and latest information. Ozoemelem (2009) also revealed that there is an increased use of electronic information resources by library and information science students than

the print collection, despite the challenges and factors that hinder the efficient usage of the electronic information resources. All respondents of the study use electronic information resources with a high frequency level. Montgomery and King (2002), as cited in Tenopir (2003) quoted why libraries prefer digital collections *"... digital journals can be linked from and to indexing and abstracting databases; access can be from the user's home, office, or dormitory whether or not the physical library is open; the library can get usage statistics that are not available for print collections; and digital collections save space and are relatively easy to maintain"*.

There are different reasons why users prefer to use electronic information resources. Some of them are, they are ease in terms of searching; possibility of copying, saving, or printing resources without any restriction.  Other reasons include validity of information, convenient to access, and the ability to instantly share articles with their peers (Palmer & Sandler 2003; Sathe, Grady & Giuse 2002).  According to Stewart (2000), electronic information resources are easier to use because of their strong searching convenience and capability, speed, completeness, and their ability to accommodate many people at a time. Vicente, Crawford and Clink (2004) reported that electronic resources are more time saving than print resources for their respondents. Studies and evidences are showing that there is a strong drive to using more electronic information resources than print resources. Generally, for many users, electronic information resources are more exciting, unique, storage and retrieval is easy, more efficient and flexible (Macdonald, 2001). A study conducted by Macdonald, Heap and Mason (2001) indicated that utilising electronic information resources had brought some new opportunities such as preference, variety of options for searching, and easily accessing information whenever required.

**Information Needs and Information Seeking Behavior**
The advancement of IT in libraries, emergence and use of electronic sources, accessing and using different electronic databases such as e-books, e-magazines, and the likes have greatly changed information need and seeking behavior by researchers or library users. These changes directly affect or change the way users search and identify information sources. Information need is the way we try to know what information or input we want to do something.  The operation of accessing information has changed globally due to the change in information accessing formats and electronic networks (Kadli & Kumbar 2013). Currently, whenever we want any digital information, the first source that comes to mind is Google search or any other searching database in our library than referring to any card catalogue which we do not find in many libraries now. The internet makes information available freely (Kadli & Kumbar 2013) which changed the information need and seeking behavior of users in Libraries.  Folorunso (2014) conducted a study which discovered that majority of the respondents 'always' check what is available on the internet and other on-line reference sources. Social science scholars studied by Al-Suqri (2011) indicated that the availability of online and electronic information resources has changed their information seeking behaviour.

Information need in its direct meaning is the demands and wants for information. "When considered from a task performance point of view, information needs are the requirements for information as they are necessary to fulfil a task" (International Organisation for Standardisation (ISO) as cited in Blom 1983). *"The term 'information need' does not necessarily imply that people are 'in need of' information as such, but that the use of information can lead to the satisfaction of a more basic need"* Wilson (1981). Factors that affect the way users search information are level of knowledge about the information sources and/or information content, accessibility, quality, cost, timeliness and trustworthiness (Du Preez 2008).

Krikelas (1983) defines information-seeking behavior as "… any activity of an individual that is undertaken to identify a message that satisfies a perceived need" (Krikelas 1983). In other words, information seeking behavior is initiated by information seeking and it involves the actions someone has taken to satisfy the information need. According to Wilson (1999) information behavior is "activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information". Kadli and Kumbar (2013) described information seeking behaviour as the way people identify, locate, find, search, organise, and use the information they are looking for whenever necessary.

Information seeking behaviour "involves a set of actions that an individual takes to express information needs, seek information, evaluate and select information, and finally use this information to satisfy his/her information needs" (Das and Achary 2014). In the digitized era, the way information is organized and retrieved is different from the traditional ways (Kadli & Kumbar 2013). In a nutshell, the information seeking behavior is the approach users take to identify, search, and retrieve specific information from different formats currently available using different methods. Therefore, it is desirable to understand sources available to start the search, the way to search in different databases, the way we download or access the resources to satisfy our information needs. Before the emergence of IT in libraries, information seeking behavior was completely different from what it is now. In the present-day context, searching the card catalogue might not be the first approach to look for an electronic database. Knowing what information is required for an identified problem leads to the question of how to retrieve or obtain information. Therefore, information seeking behavior always follows the need to satisfy information need.

Al-Suqri (2011)'s study on the information seeking behavior of scholars in the social science field indicated that users followed different stages to search and retrieve information. According to Al-Suqri (2011) the stages included initiation where the users had their ideas about what information they would be looking for, what out puts to expect and their different searching strategies that they would apply. The next stage was exploration where the scholars refer and consulted different electronic information sources available. Then monitoring, categorizing, sifting, resource selection, collecting the information and ending the search comes. These stages covered checking for latest information and relevant resources, classify what format they would refer, skimming the relevant resources after identified them before the selection and collection of the resources (Al-Suqri 2011). The searching ended with the scholars' outputs that were depended on their information seeking behavior skills applied (Al-Suqri 2011).

Das and Achary (2014) studied the information demands and the way users seek electronic information resources for nine traditional universities and three research institutions. The study distributed 600 questionnaires to participants who were selected using random method of sampling. The paper reported that participants use more than one library tools to access information from various information sources. The results revealed that the way and procedures users follow to search has changed as the information sources have been broadened. The study collected data on users' information seeking behaviour and revealed that the current information and research articles users seek information. Mostly, participants preferred electronic information resources, followed by text books, and then reference books. Folorunso (2014) summarised that the rise of digital resources, electronic databases, digitally born materials are most likely to have impact and change the way users search for information. This development has changed users' information seeking behavior. Libraries are now building relationships with their users using technologies such as Facebook, Flicker, blogs, and Twitter.

**Users Preference of Electronic Information Resources**
Institutions are converting their collection to digital or electronic format as users' preferences are shifting to electronic information resources as they have become convenient, time saving, easy to share or use. For instance, Western Illinois University library in the United States converted most of its print-only serials subscriptions from 2003 to 2009 to be accessed digitally only or any print resources that encompassed electronic access (Matlak 2010). The UNECA library digitised its publications since 1959, to afford users convenient and timely access to all users around the world. Collection development is also giving emphasis and attention to electronic information resources worldwide. Larson (2017) reflects on the importance of electronic information resources as 'a backbone' for academic libraries. Unlike print collections, electronic information resources are noted to be more advantageous.

Access to electronic information resources has changed the information seeking behavior of users. To access information, users are not no longer expected to visit libraries if they can connect to the internet using their devices at the comfort of their homes or personal spaces. Moyo (2017) studied third year Unisa students regarding their electronic resources awareness and usage. Moyo (2017) indicated in the study that majority of the respondents agreed on the advantage of using electronic information resources. The study found out that 72.2% of the respondents make use of these important electronic library resources even if there are challenges students face when using them (Moyo, 2017).

A study conducted by Folorunso (2014) on Nigerian Institute of social and Economic Research discovered that majority of scholars are users are more enthusiastic of electronic information resources and they relayed on these resources heavily than print resources. The respondents indicated that the scholars use electronic information resources highly (Folorunso 2014). The study by Folorunso (2014) however, recommended the need to create more opportunities to enhance access to electronic information resources in order to meet users' research needs.

**Challenges to Utilise Electronic Information Resources**
Studies disclosed that users prefer to use electronic information resources and have already started to use the resources to access library services. Libraries have also advanced from printed collections to electronic information resources recognizing the many advantages and convenience that come with using electronic information resources. However, despite of the many advantages, there are also challenges that users encountered that limited the efficient and maximized use of electronic information resources. Just to name but a few, the challenges include lack of knowledge or shallow level of awareness on the availability of the resources, not being familiar with the resources, infrastructure to access them digitally, information overload, and users' orientation towards them.

**Awareness of Availability of Electronic Information Resources**
The degree of your knowledge about the availability and existence of electronic information resources in your library plays a very crucial role in using the resources efficiently. Adeleke and Nwalo (2017) acknowledge the importance of the awareness of availability of electronic information resources provided by your library since it will encourage users to appreciate and utilise the resources more and easily. Creating awareness about the available resources to the clients should be a crucial aspect in terms of encouraging the users to utilise the sources

confidently.

Several studies done by for instance (Adeleke & Nwalo 2017; Larson 2017; Moyo 2017; Kwadzo 2015; Das & Achary 2014; Kwafoa, Osman & Afful-Arthur 2014; Ozoemelem 2009; Ibrahim 2004; Majid & Tan 2002) highlighted the degree of awareness about the electronic information services provided by your library is an significant factor in enhancing and maximizing the use of electronic information resources. The studies supported also unawareness was equally highlighted as a major factor to hinder to the maximum use of valuable electronic information resources

Larson (2017) conducted a study on 210 students at the University of Ghana in Legon to explore the level of awareness and use of e-resources provided by the Library. In this study, 75% of the participants knew the availability of the electronic information services provide by the Library. The study further revealed that participants were familiar with the different databases. The author concluded that awareness could provoke and elicit the high level of usage of the electronic information resources. Bajpai and Sharma (2017) conducted a similar study on users' awareness of electronic information resources and found that more than 80% of participants were aware that there are search engines, e-journals, and e-books. Kwafoa, Osman and Afful-Arthur (2014) assessed the use of electronic information resources at the University of Cape Coast in Ghana, which indicated that 92% of the respondents were aware of the existence of electronic information resources provided by the institution. The study conducted by Kwadzo (2015) on the graduate students of University of Ghana reported that 94% of the respondents were aware of the electronic information resources. Hadagali et al. (2012) studied four different Universities in Karnataka state regarding the use of electronic resources and their findings indicated that 61.70% of the users know the about the availability of the resources. However, according to this study, the researchers indicated that more proper orientation should be given to the users to enhance the awareness level. 53.79% of the respondents knew about the availability of the electronic resources provided by trial and error than 14.48% from guidance from library staff or training offered by the library (Hadagali et al. 2012).

There are studies that indicated, majority of their respondents were not informed or not aware of the electronic information services provided by their Library. For instance, the study conducted by (Mayo 2017) revealed that not having the information about the availability of the electronic information services provide by the library were mentioned as a challenge faced by the users. Ozoemelem (2009) also proved that users may not have been exposed to library sources, or their level of awareness regarding services available at libraries and how to access the services, were very low. The findings of the focus group study at the University of Tennessee in the United States by (Tenopir 2003) also indicated that majority of the students did not know in detail what electronic information resources the library offered. Intensifying awareness campaigns is necessary to enhance the utilisation of electronic information resources (Adeleke & Nwalo 2017). After studying the use of information sources, Das & Achary (2014) recommended that awareness and training programs for electronic information resources should be run from time to time so that users are well informed of services available to them and use them to a maximum advantage.

**Methodology**
The researcher used quantitative approach to describe the current status for access and utilization of electronic information resources provided by the library and explore if there are any challenges faced by the user. The researcher used primary data to draw generalised conclusion about the use of electronic information resources for the UNECA library. For this research, the non-experimental

quantitative research approach was chosen, under which survey method was used to access a sample at a cross-sectional time frame, to investigate the use of electronic information resources by UNECA library users.

According to O'Dwyer (2014), a population "…includes all individuals or groups that possess the characteristic that the researcher aims to investigate." The registration database of users in the library has information about internal users namely staff members of the organization who use the resources. Staff members include staff of UNECA and UN Agencies. There are also external users, that is, non-staff members who use the library resources. They include: researchers, students, retirees or meeting and conference participants. This study investigated both internal and external users of the library. At the time of the study, there were 500 registered internal users and 100 external users. Thus, the total population for the study was 600 users of the UNECA library. The selected 20% sample size (100) from the target population of the internal users, and sample size (20) from the target population of the external users.

A total of 120 web-based questionnaires were send through to users' email. The web-based questionnaire was designed and distributed using survey monkey, with a brief introduction about the researcher, explanation on the purpose of the research, and reasons why the respondents were selected. Informed consent was also sent through to the study participations. The link to the survey was sent with the message through email to randomly selected users.

The questionnaire was prepared based on the research objectives to answer the research questions of the study. The web-based questionnaire contained a cover letter with a brief description about the purpose of the study, consent to participation for the study. The researcher prepared 13 questions in the questionnaire in order to address the research questions (Refer to Appendix I). The types of questions are open ended, close ended, ranking, number ranking, and scaling. The study used the same questionnaire for both internal and external users. The questions were based on the initial scale items for perceived usefulness and perceived ease of use developed by Davis (1989). The initial scale used by Davis (1989) was worded in reference to electronic mail system. However, the researcher modified the worded scale to electronic information system and changed the items accordingly to suit the objectives of the study. The questionnaire has six sections, namely; user profile information, information about the services of the library, sections regarding usefulness, easiness, satisfaction, challenges and demanded services for recommendations. Prior to formulating the questionnaire, the researcher examined previous studies on the use of electronic information resources. For the full detail of the question used in this study please see appendix I.

## Data Analysis and Presentation of Results

The results of the survey are presented as follows: demographics of respondents, level of awareness, access and use of e-resources, perceived usefulness and easiness of the electronic information resources, the effects of utilising electronic information resources on performance, challenges of using UNECA electronic information resources and recommendations to enhance usage of the resources.

## Demographic Characteristics of the Respondents

It was observed that from the total questionnaire distributed for both internal and external users, the response rate was 84 (70%). Table 1 shows the overall response rate.

**Table 1 Distribution of respondents by category**

| Description | Internal (N=100) | | External (N=20) | | Total (N=120) | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Responses | 66 | 66 | 18 | 90 | 84 | 70 |
| Non-responded | 34 | 34 | 2 | 10 | 36 | 30 |
| Total | 100 | 100 | 20 | 100 | 120 | 100 |

The analysis of the results indicated that out of a total of 84 responses 53(63.1%) were male and 31 (36.9%) were female. In both clusters, majority of the respondents are male.

**Table 2 Distribution of respondents by gender**

| Gender | Internal (N=100) | | External (N=20) | | Total (N=120) | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Male | 39 | 59.1 | 14 | 77.8 | 53 | 63.1 |
| Female | 27 | 40.9 | 4 | 22.2 | 31 | 36.9 |
| Total | 66 | 100 | 18 | 100 | 84 | 100 |

**Availability of Electronic Information Resources in UNECA Library**
Respondents were asked if they are aware of the electronic information resources provided by the UNECA library and their answers are indicated in the table 3. The analysis of the responses shows that 92.3 % of the total population or 91.4% of internal users and 93.3% of external users are aware of the electronic information services provided by the UNECA Library.

**Table 3 Awareness about availability of Electronic Information Services**

| Awareness of availability of EIS | Internal (N=100) | | External (N=20) | | Total (N=120) | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Yes | 53 | 91.4 | 14 | 93.3 | 72 | 92.3 |
| No | 5 | 8.6 | 1 | 6.7 | 6 | 7.7 |
| NR | 8 | | 3 | | 11 | 13 |
| Total | 66 | 100 | 18 | 100 | 84 | 100 |

**Types of Electronic Information Resources available to UNECA Library users**
There are different electronic information services provided by the UNECA library to serve its clients. This question sought to know how frequently the scholarly databases are accessed and utilised.  The respondents were asked: Which of the following Electronic Information Services provided by the UNECA Library do you use frequently? The results in Table 4 indicate that all resources are accessed and utilised by the users. The most frequently used Electronic Information Services are e-journals (59.2%), the Institutional repository (55.3%), Internet access (47.4%), E-Books (46.1%), subscribed online databases (Pro Quest, Ebscohost, Emerald (40.8%). This finding indicated that there is variation between internal users and external users. For the Internal users, the Institutional Repository and E-journals are highly consulted. However, for the external users, Internet access and E-journals are highly accessed and consulted.

**Table 4: Frequently used Scholarly Databases**

| Scholarly databases | Internal (N=100) | External (N=20) | Total (N=120) |
|---|---|---|---|
| | | | |

|  | Freq | % | Freq | % | Freq | % |
|---|---|---|---|---|---|---|
| Subscribed online databases (Pro Quest, Ebscohost, Emerald) | 29 | 47.5 | 2 | 13.3 | 31 | 40.8 |
| Open Source Online Databases (Google Scholars, AJOL | 21 | 34.4 | 7 | 46.7 | 28 | 36.8 |
| E-Journals | 36 | 59.0 | 9 | 60.0 | 45 | 59.2 |
| E-Books | 29 | 47.5 | 6 | 40.0 | 35 | 46.1 |
| Library website | 28 | 45.9 | 5 | 33.3 | 33 | 43.4 |
| Institutional Repository | 37 | 60.7 | 5 | 33.3 | 42 | 55.3 |
| Knowledge portals like ASKIA | 17 | 27.9 | 1 | 6.7 | 18 | 23.7 |
| Internet access | 27 | 44.3 | 9 | 60.0 | 36 | 47.4 |
| Others | 2 | 3.3 | 1 | 6.7 | 3 | 3.9 |
| NR | 5 |  | 3 |  | 8 | 9.5 |

## Frequency of use of Electronic Information Resources

Respondents were asked how frequent they used the electronic information resources provided by the UNECA library. The results in Table 5 indicate that 27 (35.1%) of the respondents use the resources at least once or twice a week. This was followed by once a month 19 (24.7%) and everyday 17 (22.1%). There are 7 (9.1%) respondents who indicated that they use the electronic information resources whenever the need arises.

**Table 5 Frequency of using Electronic Information Resources**

| Frequency of use | Internal (N=100) | | External (N=20) | | Total (N=120) | |
|---|---|---|---|---|---|---|
|  | Freq. | % | Freq. | % | Freq. | % |
| Everyday | 16 | 25.8 | 1 | 6.7 | 17 | 22.1 |
| At least once or twice a week | 18 | 29.0 | 9 | 60.0 | 27 | 35.1 |
| Once a month | 19 | 30.7 | 0 | 0.0 | 19 | 24.7 |
| Once every 6 months | 5 | 8.1 | 1 | 6.7 | 6 | 7.8 |
| Once a year | 0 | 0.0 | 1 | 6.7 | 1 | 1.3 |
| Others | 4 | 6.5 | 3 | 20.0 | 7 | 9.1 |
| NR | 4 |  | 3 |  | 7 | 8.3 |

## Utilisation of Electronic Information Resources

The results in Table 6 indicate a list of scholarly databases and electronic information resources which are frequently utilised. The respondents were asked the question: Which of the following Electronic information resources /Scholarly Databases do you use frequently? All the resources are utilised by both internal and external users frequently. However, the range varies from high, medium, and low usage. As indicated in, among all the resources, highly utilised resources are: The Economist (47.3%), African Journals Online (AJOL) (32.4%), JSTOR (31.1%), Ebscohost (27%), Sciencedirect (28.4%), Financial Times (25.7%), World Bank e-library (25.7%), Emerald Insight e-resources (24.3%), Economic Intelligence Unit (EIU) (21.6%), OECD Library (21.6%), Proquest Central (18.9%), and Wiley Online Library (18.9%). Other resources are utilised from 10% to 15 % of users. For instance, EconPapers, Safari Online Library, Cambridge Journals

Online, Oxford Journals Online, Oxford Journals Online, OSO e-books, Econlit and UN ILibrary. Other resources such as CIAOnet, Global Economic Monitor (GEM), and contemporary women's issues, North Africa Journal, Gale and Project Muse have low utilisation rate by internal users and none by external users.

**Table 6 Utilisation of Scholarly databases and Electronic Information Resources**

| Electronic Information Resources | Internal Users % | External Users % | Total % |
|---|---|---|---|
| African Journals Online (AJOL) | 33.3 | 28.6 | 32.4 |
| Cambridge Journals Online | 16.7 | 7.1 | 14.9 |
| CGIAR Virtual Library | 11.7 | 7.1 | 10.8 |
| CIAOnet | 8.3 | 0.0 | 6.8 |
| Contemporary women's issues | 3.3 | 0.0 | 2.7 |
| Ebscohost | 28.3 | 21.4 | 27.0 |
| Econlit | 13.3 | 7.1 | 12.2 |
| EconPapers | 13.3 | 21.4 | 14.9 |
| The Economist | 48.3 | 42.7 | 47.3 |
| Economic Intelligence Unit (EIU) | 21.7 | 21.4 | 21.6 |
| Emerald Insight e-resources | 26.7 | 14.3 | 24.3 |
| Financial times | 28.3 | 14.3 | 25.7 |
| Gale | 3.3 | 0.0 | 2.7 |
| Global Economic Monitor (GEM) | 8.3 | 0.0 | 6.8 |
| JSTOR | 33.3 | 21.4 | 31.1 |
| Nature.com | 11.7 | 14.3 | 12.2 |
| North Africa Journal | 6.7 | 0.0 | 5.4 |
| OECD Library | 21.7 | 21.4 | 21.6 |
| OSO e-books | 15.0 | 7.14 | 13.5 |
| Oxford Journals Online | 13.3 | 21.4 | 14.9 |
| Project Muse | 3.3 | 0.0 | 2.7 |
| Proquest Central | 20.0 | 14.3 | 18.9 |
| Safari Online Library | 13.3 | 14.3 | 13.5 |
| ScienceDirect | 26.7 | 35.7 | 28.4 |
| Taylor and Francis Online | 10.0 | 21.4 | 12.2 |
| UN ILibrary | 11.7 | 14.3 | 12.2 |
| Wiley Online Library | 18.3 | 21.4 | 18.9 |
| World Bank e-library | 28.3 | 14.3 | 25.7 |
| Others: Please specify | 6.7 | 7.1 | 6.8 |
| NR | 6 | 4 | 10 |
| Total | 60 | 14 | 74 |

**Place of access**

Respondents were asked about the location from where they access UNECA electronic information resources. Table 7 shows that 59.52% of the respondents access and utilise the resources within the UNCA library. On the other hand, 40% of the respondents access and utilise

the resources remotely. To make it clear, remotely in this context refers to any location in the UNECA compound. As indicated in the introduction part the resources are accessed within limitation of the IP address of the organization. Beyond this IP address the resources are not accessible.

**Table 7: Place of access to the electronic Information Resources**

| Where do you access e-resources | Internal users | | External users | | Total | |
|---|---|---|---|---|---|---|
| | Freq | % | Freq | % | Freq | % |
| In the UNECA Library | 35 | 53.0 | 15 | 83.3 | 50 | 59.5 |
| Remotely | 31 | 47.0 | 3 | 16.7 | 34 | 40.5 |
| Total | 66 | 100 | 18 | 100 | 84 | 100 |

**Challenges to use UNECA Electronic information resources**
Users have indicated different challenges that they faced when using electronic information resources. As indicated in the literature review, some challenges included lack of digital literacy skills, not being aware of the resources provided, slow internet connectivity, information overload, logging credentials, lack of knowledge and skills including information literacy, and lack of training by the librarians. The challenges were measured by eleven (11) items.

**Expectations about Electronic information resources**
Users were asked to rate their expectations of the electronic information services provided by the library. They range from 0 (Lowest) to 5 (Average), and 10 (highest). The findings on Table 12 show that the majority (23.7%) of the respondents rate the service average. However, 92.1% of the respondents indicated that the electronic information resources provided by the library meets their expectation either on average or more than average. This means that the UNECA Library meets the expectations of its clients above average for both internal and external users.

**Table 8 Challenges of the Electronic Information Resources**

| Rating for expectation | Frequency | % |
|---|---|---|
| 1 | 0 | 0.00 |
| 2 | 2 | 2.63 |
| 3 | 2 | 2.63 |
| 4 | 2 | 2.63 |
| 5 | 18 | 23.68 |
| 6 | 4 | 5.26 |
| 7 | 14 | 18.42 |
| 8 | 15 | 19.74 |
| 9 | 8 | 10.53 |
| 10 | 11 | 14.47 |
| NR | 10 | |
| Total | 76 | 100 |

**Concerns about electronic resources in the library**
Respondents were asked to express their concerns, suggestions, and recommendations at the end of the questions in order to improve the services provided by the UNECA library. There were 37.5% (n=45) concerns and recommendations, which are highlighted in Table 8.

**Table 9: Concerns about electronic resources in the library**

|  | Frequency | Percentage |
|---|---|---|
| Resources are underutilized; | 18 | 40 |
| Users are aware the availability of the resources however not clearly know the depth of the collection; | 25 | 55 |
| There are too many databases that makes searching difficult; | 18 | 40 |
| The resources are difficult to search and access; | 9 | 20 |
| Not able to use the resources from home or mission | 25 | 55 |
| Users prefer to use google search than subscribed resources | 20 | 44 |
| Many databases not relevant to the UN | 7 | 15 |
| Create Library Marketing and promote the electronic resources and products using the different platforms the library manages; | 15 | 33 |
| Train users on how to use the resources, how to do develop query and then Searching requires skill (Give information literacy skill) | 10 | 22 |
| Create awareness about the different electronic resources and products | 15 | 33 |
| Create a mechanism to access resources remotely by using UN login credentials on home computer or while travelling on mission | 10 | 22 |
| Improve IP limitation range | 12 | 26 |
| Conducting users information needs analysis before subscription | 12 | 26 |
| Fort the staff (librarians) e-resources management training would help to better serve the users. | 8 | 17 |
| Customized and selected service provision would help to avoid information overload and time-consuming exercise to filter relevant information/documents. | 14 | 31 |
| Provide 24/7 online reference services | 5 | 11 |

**Discussion of Findings**
In order to use the available electronic information services provided by the UNECA library, users should know whether the resources are available or not. Awareness is critical because it is one of factors that could enhance or hinder the level of access and use of the resources. The findings from the study showed that majority of the respondents (92.3%) from both internal and external users of UNECA library are aware of the availability of the resources. These findings coincide with the study conducted by Larson (2017); Kwafoa, Osman and Afful-Arthur (2014); Bajpai and Sharma (2017); and Kwadzo (2015).
 Following awareness, additional information was collected from the users to find out about

the volume of utilisation and accessing the electronic information services. Majority of the positive responses indicated that all electronic information resources provided by the Library are frequently accessed, consulted and utilised. As the findings indicate, all resources are accessed and utilised well by both the internal and external users. E-journals, the Institutional repository, Internet access, E-Books, and Subscribed online databases such as ProQuest, Ebscohost, Emerald… are highly accessed, consulted and utilised. There is a variation between internal users external users. The study indicated that the Institutional Repository and E-journals are highly consulted by the staff and internal users of the Library. However, for the external users, internet access and E-journals are highly accessed and consulted. This finding concurs with the study of Bajpai and Sharma (2017) and Hadagali et al. (2012).

The study tried to capture and shed some light on the different scholarly databases that are subscribed or freely accessible as electronic information resources that are compiled and listed on the library websites to be accessed with IP access restriction. The findings of this study indicated that the top ten databases that are highly used were, The Economist, African Journals Online (AJOL), JSTOR, Ebscohost, ScienceDirect, Financial times, World Bank e-library, Emerald Insight e-resources, Economic Intelligence Unit (EIU), and OECD Library. The least or hardly used databases were CIAOnet, Global Economic Monitor (GEM), Contemporary women's issues, North Africa Journal, Gale, and Project Muse.

Although the list is not a full representative of all libraries, there are similar studies on the high use of Ebsco host, Science Direct, and Emerald. Such studies were conducted by Atakan (2007); Kwafoa et al. (2014); Larson (2017). The findings of this research will be helpful to the library institutions as it will shed some light on what decision they need to implement to provide better and improved information electronic information resources. It will also act as a guidance for library officials to take informed decisions to users in terms of reviewing their subscription services to better serve their users. There is further need to create more awareness campaigns regarding their library services.

The question of the frequent usage of library resources by library users yielded the following findings: 35.1% of the respondents use electronic library resources once or twice a week, 22.1% of the users use library electronic information resources every day, another 24.7% reported that they use electronic information resources once in a month, 8% indicated that they use electronic information resources occasionally or whenever there is a need. According to Moyo (2017), 81% of the respondents indicated that they use the electronic information resources daily, weekly, and monthly.

Respondents were also asked the location from where they usually access the resources as access to electronic resources by UNECA Library is limited to IP range. The finding indicated that 59.5% of the respondents access electronic information resources at the library, and 40.5% access electronic information resources remotely. However, there is a significant difference between location of access between the internal users and external users. Majority of external users 83.3% (n=15) access electronic information resources in the library and 16.6% (n=3) access them remotely. For internal users the difference is not significant because users are not necessary be in the Library to get the resources as long as they are in the IP range of the organization. This proves that since the resources are limited to IP range, external users are forced to use within the Library. This cause a restriction on the convenience of accessing electronic resources anywhere any time

The study revealed that the electronic information resources provided by the UNECA library are highly useful for the respondents. Majority of the users positively affirmed the usefulness of the electronic information resources. The findings shows that, the resources are

useful because they save time, improve their outputs, make it easier for users to obtain information and facilitate their research work, and the services allowed them to access different materials at the same time, wherever they are, and created the opportunity to obtain latest, up-to-date and relevant information.

The findings of this study concurred with the study conducted by Adeoye and Olanrewaju (2019), in which it was revealed that the respondents' affirmed the use of electronic information resources as useful. Moreover, it was revealed that electronic information resources helped users to accomplish tasks quickly, saved their time, enhanced their performance, improved quality of outputs, and finding relevant resources easily. These findings further confirm the same finding in the study conducted by Dadzie (2005). Al-Suqri (2011) also agreed that using electronic resources made research much easier, faster and overall improved the quality of their research for Social Science scholars. This is further confirmation that electronic information resources are useful, easy to use, flexible and easily accessible from wherever one is accessing them from.

The findings of this study revealed that electronic information resources provided by the UNECA library are simply and easy to use. Overall, majority of the respondents positively affirmed the perceived easiness of using the electronic information resources. Library users indicated that electronic information resources are easy to search and retrieve sources needed or required. Users find it easy to use electronic information resources than print collection, as they find them less frustrating and hardly confusing. Also noted as easier to use by majority of users, is Google search engine. This study confirmed other findings by other studies such as Adeoye and Olanrewaju (2019). In addition, it was revealed in this study that an overall of 74% users find electronic information resources useful, less frustrating, and hardly confusing. The findings support Komba (2013), which revealed perceived easiness and use of electronic information resources.

The findings of this study proved that for majority of the respondents, using electronic information resources provided by the UNECA Library has increased their productivity on their research. Additionally, it also indicated that the use has improved quality in their research, as well as efficiency and effectiveness in research. Overall, access and use of Electronic Information Resources provided by the UNECA library users showed significant improvement in the production of work. This result corresponds with the study conducted by Ani (2013) which proved the direct relationship between using electronic information resources on increasing productivity.

There are different challenges that hinder the maximum use of electronic information resources. The analysis of the results in this study indicated four major challenges faced by the UNECA library users, namely; lack of training from UNECA library officials on the usage of resources, limited IP address access, information overload, and the challenge of remembering all the login credentials for different online databases. Other challenges included issues related to inadequate digital literacy skills, lack of awareness campaigns on services available for users, slow internet connectivity to access library electronic information resources, time consumption in searching and using electronic information resources.

However, not all users experienced all the challenges. Only 18.9 % expressed inadequate literacy skills, 21.7% indicated lack of awareness campaigns on the available resources at libraries, a portion of 31.6% reported on slow internet connection, and 27.4% agreed that using these resources is time consuming and the searching and retrieval skills about the databases is required to comfortably search and retrieve the information demanded from the electronic information resources. The issue of information overload, problem with login and password correspond with the findings of studies conducted by Moyo (2017) and Adeleke and Nwalo (2017).

**References**

Adams, LE. 2018. The contribution of library programmes at the Emufuleni Library and Information Services in creating social capital to reduce poverty. D Ed thesis. University of South Africa, Pretoria.

Addisalem, GD. 2017. The use of electronic information resources by postgraduate students at UNISA Regional Learning Centre in Ethiopia. M Ed dissertation, University of South Africa, Pretoria.

Adeleke, DS. & Nwalo KI. 2017. Availability, Use and Constraints to Use of Electronic Information Resources by Postgraduates Students at the University of Ibadan. *International Journal of Knowledge Content Development & Technology* 7(4): 51-69.

Amonoo, PG. & Ngay, JAI. 1995. *The Library of the Economic Commission for Africa: report of the survey on the use of the library and information resources at the Secretariat.* Addis Ababa: UNECA.

Adeoye, AA. & Olanrewaju, AO. 2019. Use of Technology acceptance model (TAM) to evaluate Library Electronic Information resources use by Undergraduate students of Lead City University, Ibadan, Nigeria. *Library Philosophy and practice (e-journal).* 2471 A" (2019) https://digitalcommons.unl.edu/libphilprac/2471 (Accessed 18 August 2019).

Al-Suqri, MN. 2011. Information-seeking behavior of social science scholars in developing countries: a proposed model. *The International Information & Library Review* 43 (1):1-14

Ani, OE. 2013. Accessibility and utilization of electronic information resources for research and its effect on productivity of academic staff in selected Nigerian Universities between 2005 and 2012. D Ed thesis. University of South Africa, Pretoria.

Appleton, L. 2006. Perceptions of Electronic Library Resources in Further Education. *The Electronic Library* 24 (5): 619-634.

Ard, C. & Livingston, S. 2014. Reference and research services in special libraries: navigating the evolving riches of information. *Journal of Library Administration* 54(6): 518-528.

Ashoor, M. 2005. Information literacy: a case study of the KFUMP library. *The Electronic Library* 23(4): 398-409.

Atakan, C. 2007. An evaluation of the second survey on electronic databases usage at Ankara University digital library. *The Electronic Library* 26 (2): 249-259.

Bajpai, PN. Sharma, S. 2017. Awareness and use of electronic resources in special libraries of Delhi NCR. *International Journal of Information Dissemination and Technology* 7(4): 272-275.

Crawford, JC. & Daye, A. 2000. A survey of the use of electronic services at Glasgow Caledonian University Library. *The Electronic Library* 18(4): 255-265.

Creswell, JW. 2009. *Research design: qualitative, quantitative and mixed methods approaches.* 3rd. ed. Los Angeles: Sage.

Creswell, JW. 2014. *Research design: qualitative, quantitative and mixed methods approaches.* 4th ed. Thousand Oaks: Sage.

Dadzie, PS. 2005. Electronic resources: access and usage at Ashesi University College. *Campus-Wide Information Systems* 22(5): 290-297

Das, KC. Achary, J. 2014. Information needs, information seeking behavior and use of Electronic resources by research scholars and faculties in the University and research libraries of Odisha. *International Research: Journal of Library & Information Science* 4(4): 552-566.

Davis, F. 1989. Perceived usefulness, Perceived ease of use, and user acceptance of Information

Technology. *MIS Quarterly 13*(3): 319-340.

De Vicente, A., Crawford, J. and Clink, S. 2004. Use and awareness of electronic Information services by academic staff at Glasgow Caledonian University. *Library Review* 53(8): 401-407.

Du Preez, M. 2008. Information needs and information-seeking behavior of consulting engineers: a qualitative investigation. Masters in Information Science dissertation, University of South Africa, Pretoria.

Dulle, FW. 2015. Online Information Resources Availability and Accessibility: A Developing Countries' Scenario. African. *African Journal of Library Archives and Information Science* 25(1): 45-57

Durodolu OO. 2016. Technology Acceptance Model as a predictor of using information system' to acquire information literacy skills. *Library Philosophy and practice (e-journal).* 1450 http://digitalcommons.unl.edu/libphilprac/1450 (Accessed 18 August 2019)

Ekwelem, V., Okafor, V. & Ukwoma, S. 2009. Students' use of electronic information sources at the University of Nigeria, Nsukka. *African Journal of Library Archives and Information Science* 19(1): 89-97

Folorunso, OO. 2014. Information-seeking behaviour of social sciences scholars: a Nigerian case study. *African Journal for the Psychological Study of Social Issues* 17(2):114-127. http://www2.marilia.unesp.br/revistas/ind (Accessed 18 August 2019)

Franks, PC. 2018. *Records and Information Management.* 2nd ed. Chicago: ALA Neal-Schuman.

Gideon, L. 2012. *Handbook of Survey methodology for Social Sciences*. New York: Springer.

Haridasan, S. & Khan, M. 2009. Impact of E-Resources by Social Scientists in National Science Documentation Centre (NASSDOC), India. *The Electronic Library* 27 (1): 117-133.

Hadagali, GS., Kumbar, BD., Nelogal SB. and Bachalapu MM. 2012. Use of electronic resources by Post-Graduate students in different universities of Karnataka state. *International Journal of Information Dissemination and Technology*, 2(3): 189-195

Hawthorne, D. 2008. History of Electronic Resources, in Yu, H and Breivold S. (eds), Electronic Resources Management in Libraries: Research and practice. New York: IGI Global 1-15

Hewitson, A. 2002. Use and awareness of electronic information services by academic staff at Leeds Metropolitan University – a qualitative study. *Journal of Librarianship and Information Science* 34(1): 43-52.

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. https://www.learntechlib.org/p/92379/ (Accessed 18 August 2019)

Hlongwane, IK. 2014. Recongition of Prior Learning (RPL) implementation in Library and Information Science (LIS) Schools in South Africa. D Ed thesis. University of South Africa, Pretoria.

Ibrahim, AE. 2004. Use and user perception of electronic resources in the United Arab Emirates University. *Libri* 54: 18-29.

Kadli, Jayadev, and Basavantappa Kumbar. 2013. Library Resources, Services and Information Seeking Behaviour in Changing ICT Environment: A Literature Review. *International Journal of Information Dissemination and Technology* 3: 203–7.

Kinengyere, AA. 2007. The Effect of Information Literacy on Utilization of Electronic
Resources in Selected Academic and Research Institutions in Uganda. *The Electronic Library*
25 (3): 328-341.

Komba, MM. [2013]. Factors influencing access to electronic government information
and e-government adoption in selected districts of Tanzania. D Ed thesis, University of South
Africa, Pretoria.

Kwafoa, PNY., Imoro, O. & Afful-Arthur, P. 2014. Assessment of the use of electronic
resources among administrators and faculty in the University of Cape Coast. *Library
Philosophy and Practice* (e-journal). 1094: 1-18.
http://digitalcommons.unl.edu/libphilprac/1094 (Accessed 18 August 2019)

Larson, AG. 2017. Faculty awareness and use of Library subscribed online databases
in the University of Education, Winneba. Ghana: A survey. *Library Philosophy and Practice
(e-journal).*1515 (1-19). http://digitalcommons.unl.edu/libphilprac/1515 (Accessed 18 August
2019)

Lau, J. 2006. *Guidelines on information literacy for lifelong learning: final draft*. Boca del
Rio: IFLA. https://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-
en.pdf (Accessed 18 August 2019)

Lohr, SL. 2010. *Sampling: design and analysis*. 2nd ed. Boston: Cengage Learning.

Macdonald, J., Heap, N. and Mason, R. 2001. 'Have I learnt it?' Evaluating skills for
resource-based study using electronic resources. *British Journal of Educational Technology*
32(4): 419-433.

Mardis, MA., Hoffman, ES. and Marshall, TE. (2008). A new framework for
understanding educational digital library use: re-examining digital divides in U.S. schools.
*International Journal of Digital Libraries* 9(19): 19-27.

Matlak, J. 2010. What Drives Usage. *Journal of Electronic Resources Librarianship* 22
(3-4): 144-165.

Mavodza, J. 2010. Knowledge management practices and the role of an academic
library in a changing information environment: the case of the Metropolitan college of the New
York. D Ed thesis, University of South Africa, Pretoria.

Majid, S. & Tan, AT. 2002. Usage of information resources by computer engineering
students: a case study of Nanyang Technological University, Singapore. *Online Information
Review* 26(5): 318-25.

Moyo, M. 2017. Awareness and usage of electronic Library resources in open distance
learning by third-year students in the School of Arts at the University of South Africa. M Ed
dissertation, University of South Africa, Pretoria.

Montgomery, CH. & King, DW. 2002. Comparing Library and User Related Costs of
Print and Electronic Journals Collection. A First Step Towards a Comprehensive Analysis. *D-
Lib Magazine 8(10).* http://www.dlib.org/dlib/october02/montgomery/10montgomery.html
(Accessed 18 August 2019)

Murray, TE. 2013. What's So Special About Special Libraries? *Journal of Library
Administration* 53(4): 274-282.


O'Dwyer, LM. 2014. *Quantitative research for the qualitative researcher*. Los Angeles:
Sage.

Odede, IR. & Zawedde, N. (2018). Information Literacy Skills in using Electronic
Information Resources. *Library Philosophy and Practice (e-journal).* 1947.

https://digitalcommons.unl.edu/libphilprac/1947/ (Accessed 18 August 2019)

Ozoemelem, OA. 2009. Use of Electronic Resources by Postgraduate Students of the Department of Library and Information Science of Delta State University, Abraka, Nigeria. *Library Philosophy & Practice (e-journal) 301:(1-23).* https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1306&context=libphilprac (Accessed 18 August 2019)

Palmer, JP. & Sandler M. 2003. What Do faculty want? *Library Journal Suppl.* Winter *2003: (26-28).*

Patra, NK. 2017. *Digital disruption and electronic resource management in Libraries.* Waltham, MA: Elsevier.

Powell, RR. & Connaway, LS. 2004. *Basic Research Methods for Librarians.* Westport: Libraries Unlimited.

Prytherch, R. 2005. *Harrod's Librarians' Glossary and reference book: directory of over 10,200 terms, organizations, projects and acronyms in the areas of information management, library science, publishing and archive management.* Aldershot, Hants: Burlington, VT.

Raubenheimer, J. 2016. Developing library middle management in the context of an Open Distance Learning (ODL) environment in South Africa. D Ed thesis, University of South Africa, Pretoria.

Sathe, NA., Grady, J. & Giuse, N. 2002. Print versus Electronic Journals: a preliminary investigation into the effect of Journal format on Research Processes. *Journal of the Medical Library Association* 90(2): 235-243.

Scotti, G J. 2010. Proving value return on investment. Information Outlook: Washington 14(4): 22-24

Sekaran, U. & Bougie R. 2009. *A research method for business: a skill building approach.* 5th ed. West Sussex, London: John Wiley and Sons Ltd.

Stewart, L. 1996. User Acceptance of Electronic Journals: Interviews with Chemists at Cornell University. *College & Research Libraries* 57(4): 339-349.

Tibenderana, P., Ogao, P., Ikoja-Odongo, J. & Wokadala J. 2010. Measuring Levels of End-Users' Acceptance and Use of Hybrid Library Services. *International Journal of Education and Development using Information and Communication Technology* 6(2):1-23

Tenopir, C. 2003. *Use and users of Electronic Library Resources: an overview and analysis of recent research studies.* Washington, D.C.: Council on Library and Information Resources.

Toteng, B., Hoskins, R. & Bell, F. 2013. Use of Electronic Databases by Law Students at the University of Botswana Library. *African Journal of Library, Archives and Information Science* 23(1): 59-74.

United Nations Economic Commission for Africa. https://www.uneca.org/kss (Accessed 18 August 2019)

Verminski, A. & Blanchat KM. 2017. *Fundamentals of Electronic Resources Management.* Chicago: ALA Neal-Schuman.

Weaver M. 2012. What makes a special library "Special"?. *Feliciter* 58(3): 91-94.

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