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Information Needs and Computer Self Efficacy as Factors Influencing Use of Electronic Reference Services by Undergraduates in a Nigerian University

By

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Abstract

This study examines the influence of information needs and computer self efficacy on the use of electronic reference services by undergraduate students in a Nigerian University. Appropriate literature on information needs, computer self efficacy and use of electronic reference services was reviewed. The Descriptive survey research design was adopted for the study and the population consisted of 15395 students of the Federal University of Technology Akure and the librarian in charge of the electronic reference service in the institution's library. The multistage random sampling technique was used to select a sample size of 251 and the questionnaire and an interview schedule were the instruments used for data collection. Data was analyzed with the use of descriptive statistics consisting of frequency counts and percentages, correlation and regression analysis. The responses from the interview were thematically discussed in line with the research questions. Findings revealed that the information needs of majority of the undergraduate students were related to preparation for examination 215 (89.6%) and assignment completion200 (83.3%). Most of the respondents had high computer self efficacy (overall mean=47.06). It was only computer self efficacy that significantly predicts use of electronic reference service by undergraduates (β =.200, P<.05).

Keywords: Information needs, computer self efficacy, electronic reference services, Nigeria

Introduction

Universities are the birth place of life changing ideas and philosophies that drive development in societies (Apotiade, Oyewole and Beleu 2015). Undergraduate students constitute a significant percentage within the university environment. These individuals acquire knowledge through the process of learning and research within the university environment. Before degrees can be conferred on the undergraduates, they must have engaged in quite a number of academic activities and excelled in them. In order to assist the undergraduate students and indeed other categories of individuals make success of their academic endeavors, university

libraries are established. The university library provides access to myriads of information resources in print, audio-visual, electronic and other formats in support of the teaching, learning and research that go on in the university. In order to effectively carry out this function, library services are carried out.

One of the services that are offered in the university library is the reference service. Reference service is of one of the strongholds of library services. This is because it links information users with the required information that they desire. Kumar (2009) quoted Ranganathan who described reference service as the process of establishing the right contact. This right contact means contact between the right reader and the right book at the right time and in the right personal way. Utor (2008) also defined reference services as a direct personal assistance to readers seeking information. Some of the activities that make up reference service include answering of users' queries, user education, compilation of reading lists, indexing and abstracting, referral service, compilation of bibliographies, current awareness services and selective dissemination of information. Libraries before now have been rendering reference service traditionally in which the reference librarian and the information seeker have to meet personally and engage in the reference process.

However, due to the influence of Information and Communication Technology (ICT), electronic reference services (also called digital reference services) are gradually replacing the traditional reference services in some libraries, including university libraries. Digital reference service may be defined as "the provision of reference services involving collaboration between library user and librarian, in a computer based medium. Geronimo (2009) stated that digital reference service refers to a library service that uses a librarian's knowledge to provide onsite and or remote clients with relevant information based on a request that was initiated electronically. A more formal definition refers to of electronic reference as "a network of expertise, intermediation and resources placed at the disposal of someone seeking answers in an online environment (Singh, 2004).

A digital reference service generally comprises of the following elements: the user of the service, the interface (e-mail, web form, chat, videoconference, etc.), the information professional, and electronic resources (including electronic or CD-based resources, web resources, local digitized material etc.), as well as print resources (Berube, 2003). Digital reference services can take many forms, but they can be divided into two broad categories. These

are asynchronous digital reference and synchronous digital reference. Asynchronous digital reference is such that there is a time delay between the question being posed and the answer being given. This implies that it allows a user to submit a question and the reference librarian provides response which may not be immediate. Examples of asynchronous digital reference include the use of email, web forms and ask-a-services.

On the other hand, synchronous digital reference creates an opportunity whereby the user and the librarian communicate in real time. This implies that this form of reference service is with an almost immediate response to a query or a request. Synchronous digital reference generally takes the form of chat reference, video-conferencing or web-camera services and digital reference robots. Digital reference service can also be collaborative in nature where two or more libraries team up to offer reference services using any of the above formats. Electronic reference service presents some advantages to library patrons. For example, it provides simplicity of information access to users who cannot physically contact the library due to geographical or physical constraints. In addition, it alleviates constraints like non communication, accountability on the part of patrons and anonymity not possible with in-person reference service for the patrons who are too shy or too proud to ask for help in person. (Ossai-Ugbah, 2012).

Due to the fact that the development of electronic reference service was facilitated as a result of the advancement witnessed in the area of computer technology, a factor that could influence its use by undergraduate students is computer self efficacy. The precursor to the concept of computer self efficacy, is self efficacy. Bandura (1986) postulated the concept of self-efficacy as peoples' judgment of their capabilities to organize and execute courses of action required to attain designated types of performances. Kinzie, Delcourt and Powers (1994) submitted that self-efficacy has to do with a person's belief of his or her capabilities to successfully accomplish a particular task. It is an individual expression of what he is capable of doing.

Based on this premise, computer self efficacy can be defined as the belief of one's capability to use the computer (Compeau and Higgins, 1995). Computer self efficacy is not only concerned with the skills that an individual possesses, but also with judgments and confidence reflected in what can be done through the use of computers. Computer self efficacy is a significant determinant of performance which operates partially, independent of the level of

skills possessed. It also involves a generative capability in which an individual must organize cognitive, social and behavioral sub-skills into integrated courses of action. As such, an undergraduate students who possesses a high level of computer self efficacy might use the electronic reference services the more.

Another variable apart from computer self efficacy that could influence the use of electronic reference service by the undergraduate students is their information needs. Ehikhamenor (1990) opined that information need could be referred to as the extent to which information is required to solve problems, as well as the degree of expressed satisfaction or dissatisfaction with the information. Kuhlhau (1993) observed that information need is often understood in information science as evolving from a vague awareness of something missing and as culminating in locating information that contributes to understanding and meaning. Fiankor and Adams (2004) viewed information need as the amount of positive information an individual or group of people need to have for their work, recreation for their satisfaction. This implies that lack of information needed into accomplish tasks results in information need. Their concept of information need also means that for information to exist there must be a gap in person's knowledge.

Undergraduate students during the course of their academic sojourn could need information for completion of a project, writing of series of examination, assignment completion, continuous assessment preparation and the likes. In order to address the gap in knowledge that these academic activities may bring forward, undergraduate students might out of the other options available to them, consult the university library and utilize the electronic reference service. It is also possible for undergraduate students to have personal needs that relate to their individual development that could also be addressed by using electronic reference service. This implies that the extent of their information needs could influence the use of electronic reference service. It is based on this background, that this study is set to empirically examine information needs and computer self efficacy as factors influencing the use of electronic reference service by undergraduate students in a university in Nigeria.

Statement of the problem

Despite the benefits associated with the use of electronic reference service by the undergraduate students, observations have shown that in some of the universities that provide

this service in Nigeria, it seems underutilized. Interactions with some undergraduate students revealed that they lacked confidence in using any computerized device to access information. Thus, they could have issues with their computer self efficacy and this could affect their use of electronic reference service. In addition, the fact that undergraduates could access information from different search engines to address their information needs shows that they might not use the electronic reference service. Literature search has also revealed that very few studies have been conducted on issues associated with the use of electronic reference service in Nigeria. Therefore, this study titled information needs and computer self efficacy as factors influencing the use of electronic reference service by undergraduate students in a Nigerian university becomes imperative.

Research questions

The following research questions will guide the study:

1. What are the information needs of the undergraduates?
2. What is the level of computer self efficacy of undergraduates?
3. What are the electronic reference services available to the undergraduates?
4. What is the frequency of use of electronic reference service by the undergraduates?
5. What are the challenges faced by undergraduates in the use of electronic reference services?

Research hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

$H_0{}^1$: There is no significant relationship between information needs and the use of electronic reference service by the undergraduates.

$H_0{}^2$: There is no significant relationship between computer self efficacy and the use of electronic reference services by the undergraduates.

$H_0{}^3$: Information needs and computer self efficacy will have no joint influence on the use of electronic reference services by the undergraduates.

Literature review

Information needs of undergraduate students

Information has become an essential tool for competitive advantage both at the individual, organization, societal and national level. Information is the key factor that necessitates information need. According to Aina (2004), every individual whether literate or not, has information needs. He reiterated that the information could be for recreation, leisure or meeting tasks that are considered critical to survival or information that could meet day-to-day activities or even information that is necessary for the common good of the neighborhood, community and the nation in general. According to Kumar (2008) information needs vary from function to function, from environment to environment, from discipline to discipline and even from age to age. Wilson (1994) noted that information needs vary in relation to the subject fields of users, their educational background, and years of experience or function performed.

Information need exists when there is a knowledge gap in what an individual's knows and what is required to make sense of a situation. Wilson (1997) points out that there must be an attendant motive when a person experiences information needs. Information is needed because it affects people's lives. People need information to obtain answers to specific questions (Nicholas, 2000). Information represents an ordered reality about the nature of the world people live in. It is a cognitive experience that represents gaps in the current knowledge of information users (Devadason and Lingam, 1997). An information need is inherently subjective and occurs only in the mind of seeker, making all the approaches problematic.

The concept of information needs of undergraduate has been of great concern to stakeholders especially in developing countries where access to information is not always guaranteed. Researchers have made it known that, the way students organize their learning and search for academic information could be considered very crucial to their overall performance at the end of the day. Thus, information needs is pertinent for undergraduate academic performance. Studies have been conducted that reported on the various information needs of undergraduate students.

Emmanuel and Jegede (2011) examined the information needs, information seeking behavior and use of information resources by MBA students of the Obafemi Awolowo University, Ile-Ife Nigeria. The questionnaire was the instrument for data collection and 210

students were sampled. Findings showed that information needs of the MBA students centered on their course work and research. Specifically, majority of the respondents (99.7%) indicated that they need information on business management, 98.5% expressed that their information needs centered on policy issues relating to business activities and 96.8% noted that their information needs were on corporate development.

Majid et al (2012) examined the information needs and seeking behaviour of 66 MBA students in Singapore, and data was collected through the questionnaire and snowball sampling technique was used. Results revealed that the information needs of majority of the respondents included writing assignments, conducting case study analysis, preparing for student presentation and class discussion. Ossai-Onah (2013) studied information needs and seeking behaviour of undergraduate students in Federal University of Technology Owerri (FUTO) and Imo State University (IMSU). The questionnaire was used to collect data from 3,304 students and findings revealed that all of the respondents (100%) in FUTO AND IMSU acknowledged that their information needs are linked to their academic and research activities.

Shakeel and Vinayagamoorthy (2013) studied the information seeking behaviour of business school students in eighteen universities and colleges in Academic City, Dubia. The respondents included 1699 students, results showed that majority of the students 1699 (90.7%) indicated that their main information needs were related to their academics. Nadzir, Wahab and Othman (2015) researched into undergraduates' needs and seeking behaviour at the Universiti Utara Malaysia (UUM), 39 final year students at the 2014/2015 session were sampled. Findings showed that most of the respondents 20 (51.3%) indicated that the information needs that they considered very important were those that relate to the preparation of a project, data collection and development of a system. Abdullahi, Igbonovia and Solanke (2015) assessed the information needs and seeking behavior of undergraduates in University of Ilorin, Ilorin, Nigeria. Findings showed that the information needs of the respondents included those relating to examinations, assignments, course work and learning.

Computer self efficacy of undergraduate students

Some studies have also considered computer self efficacy of students in relation to different aspects of information systems usage within and outside the library. Sam, Othman and Nordin (2005) studied computer self-efficacy, computer anxiety, and attitudes toward the

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Internet by undergraduates in Unimas and found out that majority of the respondents possessed a high level of computer self efficacy. Specifically, most of the undergraduates (98.6%) used the Internet for e-mail services, research purposes (95.9%), downloading electronic papers (95.3%), entertainment (85.1%), and gathering product and service information (82.4%). However, only 66.2%, 56.8%, 50.0%, and 46.6% of the 210 undergraduates used the Internet for downloading software and games, assessing newsgroups, chat room, and games respectively.

Shrestha (2008) surveyed use of library resources by 510 students of Thapathali College, National College of Computer Science (NCCS) and Kath Mandu University; random sampling was used to select 25% of the total population. A total number of 200 copies of the questionnaire were administered and out of which 123 were duly returned and found useful for analysis. It was concluded from the findings that the students were able to use library resources because they were endowed with computing skills from the school level. This also manifested itself in the way they utilized the Internet, as they had good Internet self efficacy.

The study by Eyitayo (2011) on the relationship between computer self efficacy and the use of OPAC by final year students of the University of Botswana, between August and October 2009 revealed that majority of the undergraduates (58.9%) agreed that they possessed a high level of computer self efficacy in the use of OPAC. Poelmans, Truyen and Stockman (2012) also researched ICT skills and computer self efficacy of students in the Flemish region of Belgium. The respondents included 195 students, undergraduates inclusive and findings showed that majority of the noted that they had a high level of ICT skills and computer self efficacy. An individual item analysis clearly indicated that students are most confident with file management activities, and that students were convinced that they were well aware of the traces they leave on the internet (posting information and using social network sites).

In a recent study, Nwobu, Oyewole and Apotiade (2016) studied the computer self efficacy of Federal College of Education Technical students as regards the use of online public access catalogue. The questionnaire was the data collection instrument and results showed that most of the respondents had a very high level of computer self efficacy. This conclusion was reached as a result of the findings which showed that majority of the respondents 113 (55.7%) echoed that "I feel confident understanding terms/words relating to OPAC use", 107 (52.7%) indicated that "I feel confident using OPAC even if I have never used it before" and 100 (49.3%)

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said "I feel confident using OPAC even if I only have library orientation". In addition, 100 (49.3%) also expressed that they had the necessary knowledge to use OPAC.

Availability and use of electronic reference service to undergraduate students

Scholars have researched into how electronic reference services are used by library users, including undergraduate students. Dollah (2006) studied digital library services in selected public academic libraries in Malaysia found out that online chat reference was the most used digital reference service with a percentage of 43.8%, followed by email with 43.8%. The least used digital reference service was telephone with 13.8%. Similarly, Hill, Hill and Sherman (2007) reviewed digital reference activity for two semesters at Southern Louisiana University. The study examined the 1,447 requests for information via digital reference and findings showed that most of the respondents 954 (66%) indicated that the most used service was chat, 410 (28%) chose email and 83 (6%) utilized text messaging. The study noted that the most used electronic reference service was chat messaging.

Okeke, Oghenetga and Nwabu (2013) studied the students' attitude towards the use of reference information services (RIS) in academic libraries in Anambra State, Nigeria, especially on the availability of digital reference services revealed and discovered some of the respondents (25.64%) indicated that telephone (GSM) services was the most available. This was followed by the social media services with 8.20% and online live chat with reference librarian with a low percentage of 0.01%. On the contrary, none of the respondents indicated that chat services and email alert services were available.

Apotiade, Oyewole and Beleu (2015) studied availability, accessibility and utilization of electronic reference services by undergraduate students in Bells University, Ogun State, Nigeria and reported that even though all the electronic reference services were available, the most available as indicated by the highest number of respondents 205 (96.2%) was email of questions to the librarian. This was followed by online chatting with the librarian and discussion over the phone with the librarian as expressed by 201 (94.4%) of the undergraduate students. Studies have also reported the forms of electronic reference services that are used by students.

Madukoma (2015) examined the user's perception of electronic reference services in Babcock University, Ilishan-Remo, Ogun State, Nigeria. The population of study included 250 registered library users that included undergraduate students and the questionnaire was used to

collect data. Findings showed that most of the respondents 137 (76.5%) indicated that they highly preferred e-reference services was the Internet. Other highly preferred electronic reference services were e-mail, short messaging service and android phones as noted by 86 (48.0%), 76 (43.5%) and 74 (41.3%). The fact that these electronic reference services were highly preferred could also symbolize that they could be frequently used by the respondents.

Challenges faced by undergraduates in the use of electronic reference services

The use of electronic reference services by undergraduates has not been entirely free from challenges. For instance, Dollah (2006) in Malaysia itemized five challenges that the respondents faced in their use of the digital reference services. Most of the respondents (53.9%) viewed limited explanation via the electronic medium as a challenge, as close to average (46.3%) identified information overload as a challenge and (44.8%) indicated that no face to face interaction was indeed a constraint. Others (44.3%) and (37.7%) considered absence of the human element and infrastructural and system instability as challenges respectively.

Chow and Croxton (2014) did a usability evaluation of academic reference services at a university that was not clearly identified in their work. They randomly selected groups of students that included undergraduates and a mixed method of qualitative and quantitative were used. The study compared patrons' perceptions of usability of five virtual reference support services (email, telephone, instant messaging (online chat), text messaging and Skype video conferencing). They noted that the challenges that undergraduates faced in their use of electronic reference service included delay experienced in the time they had to wait for their queries to be answered through email and chat. Most of the respondents did not appreciate that a waiting period could be needed.

Apotiade, Oyewole and Beleu (2015) also reported on the challenges faced by undergraduate students of Bells University, Ogun State, Nigeria in the use of electronic reference services. Results showed that the undergraduate students faced several challenges in their use of electronic reference services. Majority of them 186 (87.3%) agreed that erratic supply of electricity was a challenge, while 162 (76%) acknowledged that they lacked Information and Communication Technology (ICT) skills. Other constraints that hindered the use of electronic reference services as indicated by 146 (68.6%) and 150 (70.4%) were slow internet connectivity and inadequate finance.

Information needs and use of electronic reference services by undergraduates

There seems to be a dearth of literature on relationship between information needs and use of electronic reference services by undergraduates. However, insights into the link between these two variables could be determined if studies that researched into the relationship between information needs and use of library and library resources are reviewed. Tsafe (2004) studied students' use of Usmanu Danfodiyo University Library and found that the respondents also visited the library for more than one reason. According to Halsey (2006), young people may go to the library to study, to use computer workstations, or to socialize with friends. Hasley also added that they may also use the libraries to gain access to recreational materials, conduct research during the initial phases of forming a new business and unemployed people may use the collections to find information about job opportunities. From the responses noted in a study by Weber and Flatley (2008) it was obvious that the students saw the library as an important place for studying, meetings, and group projects while most students did not use the library for personal research interests or leisure activities.

Also, Oyewusi and Oyeboade (2009) conducted an empirical study of accessibility and use of library resources by undergraduates in a Nigerian state university of technology and asked the students to indicate the reasons for using the university library, study showed that 302 (76.8%) respondents used the library as a place where they can read and study. The study also revealed that 31 (7.9%) used the library for research, 17 (4.3%) used the library whenever they want to borrow books while 29 (7.4%) and 7 (1.8%) sleep and socialize in the library respectively. The result of the study also showed that 7 (1.8%) of the respondents used the library for entertainment and leisure. The result indicated that most Nigerian students see the library as a place where serious academic work could be done.

Emmanuel and Jegede (2011) carried out a research on Information needs and information seeking behaviour and use of information resources by MBA students at a Nigerian university and found out that the MBA graduate students' information needs and information seeking behaviour and use of information resources is influenced primarily by the demand on their course requirement, availability of information sources and ease of access and use. Traditionally, the universities and their libraries represented physical knowledge centres, which individuals will have to visit to receive the information they needed.

Results from the various studies that were reported reveal that students use the library services, reference service inclusive whenever they have the need. The information needs of the students are determined by different factors. However, regardless of why undergraduate students seek information, these individuals know where and how to access whatever type of information that they need. As such, it cannot be said with all certainty that there is a significant positive relationship between information needs and use of electronic reference service by the undergraduate students. The fact that quite a number of information sources are available for use by the undergraduate students proves that they do not have to use electronic reference service before their information needs can be met.

Computer self efficacy and use of electronic reference services

The level of computer self efficacy expressed by the undergraduate students could have a relationship with their use of electronic reference service. However, the review of literature has shown that not much has been done by researchers to test this relationship. Though few studies have examined the relationship that exists between aspects of computer self efficacy and use of library resources and services that are electronic in nature. These studies will be reviewed in order to ascertain the pattern of relationship that exists between computer self efficacy and use of electronic services whether in the library or outside the four walls of the library.

Wu and Yeh (2012) examined the effects of undergraduate students' competence on usage of library electronic collections at National Taiwan University (NTU). Participants included freshmen and seniors and 443 valid questionnaires were collected. Results indicated that the most students agreed that library electronic resources were important to their studies, but they did not use them frequently. Not all the students possessed equivalent computer competences to use library electronic resources. The study also found out that most of the students were not confident about their capabilities in using library electronic resources. Low correlation was found was found between students' levels of computer competences and their frequency, familiarity and perceived importance of electronic resources.

Israel and Edesiri (2016) conducted a study on the undergraduates' computer skills and use of online information resources in Delta State University. The research adopted the descriptive survey research technique and 200 students of Library, Archival and Information Studies were randomly selected for the study. The questionnaire was used to collect data and findings revealed that majority of the students had good computer skills and 98% of the

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respondents agreed that computer skills enhanced their use of online information resources as well as being confident in using online information resources due to their level of computer skills.

Sadiku and Kpakiko (2017) examined the relationship between computer self efficacy and use of electronic resources by students in Nigerian university libraries. Descriptive survey research approach was used and the sampled survey of students from six universities across the six geographical zones in Nigeria was done. The questionnaire was the data collection instrument and results showed that the students who were computer competent expressed interest in using the libraries e-resources at the same time exhibited higher self-efficacy. These studies highlight the fact that depending on the context and environment, there is a form of relationship between computer self efficacy and use of electronic information resources. As such it is expected that there could also be a significant positive relationship between the level of computer self efficacy of undergraduate students and use of electronic reference services.

Methodology

The study adopted the descriptive survey research design. The population of this study consists of the undergraduates of Federal University of Technology Akure (FUTA), Ondo State, Nigeria and the librarian in charge of electronic reference service in the FUTA library. According to the data collected from the Examination and Records Department which is under the Registry of the institution, the total number of undergraduates in seven schools is 15395. This number forms the population of the study. The multistage random sampling method was used for this study. In the first stage three out of the seven schools in FUTA were randomly selected using the balloting method. The schools were School of Management Technology (SMAT), School of Agriculture and Agricultural Technology (SAAT) and School of Earth and Mineral Sciences (SEMS). The next stage of sampling involved the purposive selection of two departments with the highest number of undergraduates in each of the schools. The selected departments in SMAT were Project Management Technology and Transport Management Technology, while in SAAT, Food Science and Technology and Animal Production and Health were selected. In SEMS, the selected departments were Applied Geology and Applied Geo Physics. The last stage involved the selection of the sample size from the departments. In order to determine the sample size, a sampling fraction of 10% was used. With the use of this sampling fraction, the sample size for

the study is 251. The questionnaire and an interview schedule for the librarian were the research instrument used for data collection. Descriptive statistics of frequency counts, correlation analysis and regression analysis were used to analyze the data.

Results

Questionnaire administration and return rate

A total of 251 copies of the questionnaire were administered to the undergraduate students of the Federal University of Technology Akure (FUTA) Ondo State Nigeria, who were in three schools and six departments. However, 240 copies were returned and found useful for analysis giving a response rate of (96%) (Table 1).

Table 1 Distribution of questionnaire administration and return rate

Schools	Selected Departments	Distribution	Return
School of Agriculture and Agricultural Technology	Food Science and Technology	48	40
	Animal Production and Health	41	39
School of Earth and Mineral Sciences	Applied Geology	42	41
	Applied Geophysics	41	41
School of Management Technology	Project Management Technology	44	44
	Transport Management Technology	35	35
Total		**251**	**240**

4.3 Demographic characteristics of respondents

Table 2 presented results on the demographic variables of respondents and findings revealed that majority of the undergraduates 125 (52.1%) were in 500 level, while 10 (4.2%) were in their first year. This implies that most of the respondents had spent quite a number of years in the university system and are expected to have used the electronic reference services in the course of their academic work. Results also showed that most of the respondents 174 (72.5%) were between 21-25 years of age, as only 2 (0.8%) indicated that they were above 30 years old. Findings also revealed that the undergraduates consisted of more males 153 (63.8%) than the females 87 (36.2%). Almost all the undergraduates that were sampled 213 (88.8%) acknowledged that they were of the Christian faith, while just 2 (0.8%) noted that their religion was the African Traditional Religion.

Table 2 Demographic characteristics of respondents

Variables	Frequency	Percentage
Level		
100	10	4.2
200	14	5.8
300	38	15.8
400	53	22.1
500	125	52.1
Total	**240**	**100.0**
Age		
16-20	35	14.6
21-25	174	72.5
26-30	29	12.1
>30	2	0.8
Total	**240**	**100.0**
Gender		
Male	153	63.8
Female	87	36.2
Total	**240**	**100.0**
Religion		
Christianity	213	88.8
Islam	25	10.4
African Traditional Religion	2	0.8
Total	**240**	**100.0**

Answers to research questions

Research question one: What are the information needs of undergraduates of Federal University of Technology Akure (FUTA)?

Table 3 captured the responses of the undergraduate students of Federal University of Technology Akure on their information needs. Results showed that majority of the respondents 215 (89.6%) noted their most prominent information needs was that of examination preparation. While other prominent information needs as indicated by a significant number of the undergraduate students included assignment completion 200 (83.3%), personal development 188 (78.3%) and project writing/ research. This result was corroborated by the librarian in charge of the reference section in FUTA library during an interview conducted with him. He identified the most prominent information needs of the undergraduates that made them seek out reference service as that needed for their final year project. Others stated are assignment completion, term paper development and for personal development.

It can therefore be deduced that the information needs of the undergraduates in the Federal University of Technology Akure are those related to preparation for examination, final year project, assignment completion, term paper development and for personal development. This reflects the information needs of most undergraduates.

Table 3 Information needs of undergraduates in Federal University of Technology Akure

Information Needs	SA		A		D		SD	
I need information for;	Freq	%	Freq	%	Freq	%	Freq	%
Examination Preparation	215	89.6	24	10.0	-	-	1	0.4
Assignment Completion	200	83.3	40	16.7	-	-	-	-
Project Writing/ Research	183	76.3	42	17.5	15	6.3	-	-
Group Discussion	97	40.4	112	46.7	31	12.9	-	-
Preparation for Lectures	131	54.6	83	34.6	26	10.8	-	-
Personal Development	188	78.3	50	20.8	2	0.8	-	-
Leisure and Recreation	79	32.9	121	50.4	33	13.8	7	2.9
Enhancement of Lecture Notes	94	39.2	125	52.1	11	4.6	10	4.2

Seminar Presentation	166	69.2	64	26.7	7	2.9	3	1.3
Continuous Assessment Preparation	157	65.4	74	30.8	6	2.5	3	1.3

Research question two: What is the level of computer self efficacy of undergraduates of Federal University of Technology Akure?

Table 4 presented results on the level of computer self efficacy of the undergraduate students in Federal University of Technology Akure, Ondo State Nigeria. In order to determine the level of computer self efficacy, a test of norm of conducted. The scale between 1-17 shows that the level of computer self efficacy is low, the scale between 18-34 indicates that the level of computer self efficacy is moderate and the scale between 35-52 shows that the level of computer self efficacy of respondents is high. Thus, the overall mean for computer self efficacy as indicated by the responses of the undergraduate students is 47.06 which fall between the scale "35-52". Therefore it could be deduced that the level of computer self efficacy of most of the undergraduate students in Federal University of Technology Akure (FUTA) is high.

This can further be inferred from the responses of the undergraduate students as most of them affirmed that they can work on a personal computer and also copy a work with and from a flash drive. They also affirmed that they can make a selection from an on-screen menu and can also exit from an application software among others. The reference librarian of FUTA also attested to the level of computer self efficacy of the undergraduates. He stated categorically without mincing words that "the level of computer self efficacy of the undergraduate students is high". Thus, this lays credence to the opinion of the undergraduates.

Table 4 Level of computer self efficacy of undergraduates in Federal University of Technology Akure

Statements	SA		A		D		SD	
I feel confident;	Freq	%	Freq	%	Freq	%	Freq	%
Working on a Personal Computer	199	82.9	40	16.7	1	0.4	-	-
Entering and saving numbers or words into a file	181	75.4	54	22.5	5	2.1	-	-

Exiting from the application software	166	69.2	71	29.6	3	1.3	-	-
Retrieving a data file to view on the monitor screen	159	66.3	75	31.3	5	2.1	1	0.4
Understanding terms relating to computer hardware and software	128	53.3	102	42.5	9	3.8	1	0.4
Handling removable storage devices correctly	116	48.3	115	47.9	8	3.3	1	0.4
Learning to use a variety of application software	129	53.8	104	43.3	7	2.9	-	-
Making selections from an on-screen menu	171	71.3	68	28.3	1	0.4	-	-
Using a printer to print out my work	159	66.3	67	27.9	13	5.4	1	0.4
Copying from a flash drive	189	78.8	48	20.0	2	0.8	1	0.4
Using the computer to write a letter or essay	155	64.6	68	28.3	16	6.7	1	0.4
Using the computer to organize information	139	57.9	84	35.0	17	7.1	-	-
Using computer related tools and devices	151	62.9	80	33.3	8	3.3	1	0.4

Research question three: What are the electronic reference services available to undergraduates of Federal University of Technology Akure?

Table 5 presented results on the availability of electronic reference services to the undergraduates of the Federal University of Technology Akure. Findings showed that the most available electronic reference services to majority of the respondents 117 (48.8%) was email reference. The second most available was the use of the telephone to provide electronic reference service as indicated by 114 (47.5%) and the third electronic reference service that was very readily available was online chat with the reference librarian as noted by the majority of the respondents 112 (46.7%).

On the contrary, there were some forms of electronic reference service that were not readily available from the point of view of a significant number of the undergraduate students. These include digital reference robot and ask-a-librarian through the library's websites as

affirmed by 143 (59.6%) and 112 (46.7%) respectively (Table 5). The results reveal that the undergraduate students of the Federal University of Technology Akure have the opportunity to use the electronic reference service if they so desire. The fact that most of the undergraduate students confirmed the availability of some forms of this service proves that electronic reference service is available for use in FUTA.

Table 5 Availability of electronic reference service to undergraduates in Federal University of Technology Akure

Electronic Reference Services	VRA		RA		NRA		NA	
	Freq	%	Freq	%	Freq	%	Freq	%
Email Reference	117	48.8	114	47.5	9	3.8	-	-
Online Chat Reference	112	46.7	117	48.8	11	4.6	-	-
Telephone	114	47.5	113	47.1	11	4.6	2	0.8
Social Media Services (Facebook, Whatsapp etc)	83	34.6	128	53.3	28	11.7	1	0.4
Video chat/Conference like Skype etc.	26	10.8	95	39.6	113	47.1	6	2.5
Ask a Librarian through library websites	32	13.3	84	35.0	112	46.7	12	5.0
SMS/Text Messages	84	35.0	103	42.9	51	21.3	2	0.8
Web form	43	17.9	80	33.3	106	44.2	11	4.6
Digital Reference Robot	20	8.3	29	12.1	143	59.6	48	20.0

Research question four: What is the frequency of use of electronic reference service by undergraduates of Federal University of Technology Akure?

Table 6 showed that the forms of electronic reference services that were used daily included social media services (Facebook and Whatsapp etc.), electronic reference services through the telephone and online chat reference as indicated by 109 (45.4%), 101 (42.1%) and 101 (42.1%) respectively. On the other hand, the electronic reference services that were used occasionally by a significant number of the undergraduate students were ask-a-librarian through

library website, digital reference robot and video chat/conference like Skype as noted by 144 (60.0%), 134 (55.8%) and 124 (51.7%).

In attesting to the variation in the pattern of response of the respondents, the reference librarian in the interview noted that the frequency of use of electronic reference service by the undergraduate students seem to be influenced by their information needs. He stated that the reference section witnesses more traffic daily during the time of examinations or sometimes when the undergraduate students have to complete an assignment or a term paper. This reveals that apart from these times, the electronic reference service is seldom used.

Table 6 Frequency of use of electronic reference service by undergraduates in Federal University of Technology Akure

Electronic Reference Services	Daily		Weekly		Monthly		Occasionally		Never	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Email Reference	71	29.6	50	20.8	60	25.0	56	23.3	3	1.3
Online Chat Reference	101	42.1	31	12.9	48	20.0	56	23.3	4	1.7
Telephone	101	42.1	38	15.8	43	17.9	53	22.1	5	2.1
Social Media Services (Facebook, Whatsapp etc)	109	45.4	27	11.3	54	22.5	46	19.2	4	1.7
Video chat/Conference like Skype etc.	10	4.2	35	14.6	43	17.9	124	51.7	28	11.7
Ask a Librarian through library websites	7	2.9	16	6.7	35	14.6	144	60.0	38	15.8
SMS/Text Messages	72	30.0	22	9.2	24	10.0	111	46.3	11	4.6
Web form	40	16.7	15	6.3	28	11.7	117	48.8	40	16.7
Digital Reference Robot	6	2.5	9	3.8	24	10.0	134	55.8	67	27.9

Research question five: What are the challenges faced by undergraduates in the use of electronic reference services in Federal University of Technology Akure?

Table 7 presented results on the challenges faced by undergraduates in the use of electronic information resources and findings showed that most of the respondents 207 (86.3%) affirmed that the greatest challenge was epileptic power supply. Other prominent challenges included inadequate finance and slow internet network as indicated by majority of the respondents 169 (70.4%) and 164 (68.4%) respectively. The reference librarian of FUTA in the interview also alluded to the fact that funding is really challenge. He outlined other perceived challenges to include slow internet connection, lack of maintenance culture, deficit of Information and Communication Technology tools and issues relating to staffing.

Despite the challenges observed by most of the undergraduate students and the librarian in charge of reference service, some respondents also disagreed that they faced certain outlined challenges in the instrument. Majority of the respondents 125 (52.1%) disagreed that the reference librarian offered a bias treatment. A significant number of respondents 122 (50.8%) also disagreed that they had computer phobia, while 120 (50.0%) noted that they never faced the challenge of unresponsiveness from the reference librarian (Table 7).

Table 7 Challenges faced by the undergraduates of Federal University of Technology Akure in the use of digital reference service

Challenges	SA		A		D		SD	
	Freq	%	Freq	%	Freq	%	Freq	%
Epileptic Power Supply	207	86.3	28	11.7	4	1.7	1	0.4
Lack of Information and Communication Technology Skills	66	27.5	75	31.3	72	30.0	27	11.3
Computer Phobia	30	12.5	50	20.8	122	50.8	38	15.8
Bias treatment by the librarian	26	10.8	52	21.7	125	52.1	37	15.4
Unresponsive attitude of librarian	29	12.1	58	24.2	120	50.0	33	13.8
Slow internet network	164	68.3	67	27.9	8	3.3	1	0.4

Inadequate finance	169	70.4	67	27.9	3	1.3	1	0.4
Lack of Awareness of the availability of the service	150	62.5	58	24.2	27	11.3	5	2.1

Test of hypotheses

Hypothesis one: There is no significant relationship between information needs and use of electronic reference service by undergraduates in Federal University of Technology Akure

Table 8 showed that there is a relationship between information needs and the use of electronic reference service by undergraduates in Federal University of Technology Akure, though the relationship is not significant ($r = .020$; $df = 239$; $p < 0.05$). This implies that the more the information needs of the undergraduates, there is a moderate probability that the use of electronic reference service might also increase. Therefore, since the relationship is not significant, the null hypothesis is still accepted.

Table 8 Relationship between information needs and use of electronic reference service by undergraduates in Federal University of Technology Akure

Variables	Mean	Std. Deviation	N	r	df	Sig (p)	Remark
Information needs	35.55	3.398	240	.020	239	000	Not Sig.
Use of electronic reference services	27.15	7.020	240				

Hypothesis two: There is no significant relationship between computer self efficacy and the use of electronic reference service by undergraduates in Federal University of Technology Akure

Table 9 showed that there is a significant positive relationship between computer self efficacy and use of electronic reference service by undergraduates in Federal University of Technology Akure (FUTA), Ondo State, Nigeria ($r = .196^*$; $df = 239$; $p < 0.05$). This means that

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as the level of computer self efficacy increases, the utilization of electronic reference service also increases. Thus the null hypothesis is rejected and the alternative accepted.

Table 9 Relationship between computer self efficacy and use of electronic reference service by undergraduates in Federal University of Technology Akure

Variables	Mean	Std. Deviation	N	r	df	Sig (p)	Remark
Computer self efficacy	47.05	4.861	240	.196[*]	239	000	Not Sig.
Use of electronic reference services	26.51	3.761	240				

Hypothesis three: Information needs and computer self efficacy will have no joint influence on the use of electronic reference service by undergraduates in Federal University of Technology Akure

Table 10 showed the relative contribution of information needs and computer self efficacy to the prediction of use of electronic reference service by undergraduates in Federal University of Technology Akure. The table showed a coefficient of multiple correlation (R=.241 and a multiple R^2 of .050). This means that 5% of the variance was accounted for by the two predictor variables when taken together. The significant of the composite contribution was tested at P<.05. The table also showed that the analysis of variance for the regression yielded F-ratio of 7.276 (P<0.01). This implies that the joint contribution of the independent variables to the dependent variables was significant and the other variables not included in this model may have accounted for the remaining variance. Thus, the null hypothesis is rejected.

Table 10 Joint contribution of information needs and computer self efficacy to reading the use of electronic reference service by undergraduates in FUTA

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.241[a]	.58	.050	6.842
ANOVA[a]					
Model	Sum of	Df	Mean	F	Sig.

	Squares		Square		
Regression	681.261	2	340.631	7.276	.001[b]
Residual	11095.339	237	46.816		
Total	11776.600	239			

Table 11 reveals the relative contribution of the two independent variables to the dependent variable, expressed as beta weights, viz information needs (β = .043, P< .05) and computer self efficacy (β =.200, P<.05). Hence out of the dependent variables, it is the computer self efficacy that significantly predicts use of electronic reference service by undergraduates.

Table 11 Multiple regression analysis showing the relative contribution of information needs and computer self efficacy to the prediction of use of electronic reference service by undergraduates in Federal University of Technology Akure (FUTA)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	40.31	6.046		6.671	.000
1	Information needs	.089	.131	.043	.683	.495
	Computer self efficacy	.155	.049	.200	3.125	.002

a. Dependent Variable: Use of electronic reference service

Discussion of findings

Findings showed that the information needs of majority of the undergraduate students were related to preparation for examination, final year project, assignment completion, term paper development and for personal development. All these constitute the various academic needs of an average undergraduate student in most universities especially in Nigeria. This is in agreement with the findings of Abdullahi, Igbinovia and Solanke (2015) who assessed the information needs and seeking behavior of undergraduates in University of Ilorin, Ilorin, Nigeria and discovered that information sought by students were generally about assignments, examinations and lectures.

Results revealed that the level of computer self efficacy of most of the undergraduate students was high. This is not unconnected with the fact that more undergraduates are exposed to the use of computer and related devices now than before. Most undergraduates presently are technologically savvy as a result of the advancements in the world of Information and Communication Technology. This supports the findings of Poelmans, Truyen and Stockman (2012) that researched into ICT skills and computer self efficacy of students in the Flemish region of Belgium where findings showed that majority of the noted that they had a high level of ICT skills and computer self efficacy.

The electronic reference services that were available to a significant number of the respondents were email reference, the use of the telephone and online chat with the reference librarian. On the other hand, digital reference robot and ask-a-librarian were not readily available. This could be as a result of the fact that the reference librarian has mastered how to use his or her email and telephone to provide reference service. This corroborates the results of Apotiade, Oyewole and Beleu (2015) that reported in line with the findings of this study that the most available electronic reference services as indicated by the highest number of respondents was email of questions to the librarian. This was followed by online chatting with the librarian and discussion over the phone with the librarian.

The forms of electronic reference services that were used daily included social media services (Facebook and Whatsapp etc.), electronic reference services through the telephone and online chat reference. Ask-a-librarian through library website, digital reference robot and video chat/conference like Skype were used occasionally. This highlights how accessible the undergraduates can request for a reference service through the social media and the telephone. This is a pointer to the fact that they get replies to the queries for most of them to use the service on a daily basis. This is also supports the findings of Dollah (2006) where online chat reference was the most used digital reference service.

The challenges faced by undergraduates in the use of electronic information resources as outlined by most of the respondents were epileptic power supply, inadequate finance and slow internet network. These problems are not new in the Nigerian environment. This result is supported by Apotiade, Oyewole and Beleu (2015) who also found out that the undergraduate students faced several challenges in their use of electronic reference services challenges which

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included erratic supply of electricity and slow internet connectivity. This is however in contrast with study conducted by Dollah (2006) where the major challenges that the respondents faced that inhibited their use of electronic reference services were limited explanation via the electronic medium and lack of face to face interaction.

There was a relationship between information needs and the use of electronic reference service by the undergraduates, though the relationship was not significant. This implies that the more an undergraduate has information needs, the more he or she is likely to use electronic reference service. This is not significant because it is possible for an individual to have more information needs and still not use the electronic reference service in the library to have his or her needs met. This is especially the case in the era of Google. Undergraduates may decide to use this search engine and not use the electronic reference service. The information needs of the students are determined by different factors. However, regardless of why undergraduate students seek information, these individuals know where and how to access whatever type of information that they need.

There was a significant positive relationship between computer self efficacy and use of electronic reference service by majority of the undergraduates. The high the computer self efficacy of an undergraduate is, the more the use of electronic reference service. This is in support of the study conducted by Israel and Edesiri (2016) where findings showed that majority of the students had good computer skills and most of them agreed that computer skills enhanced their use of online information resources as well as being confident in using online information resources due to their level of computer skills. Results showed that computer self efficacy only significantly predicts use of electronic reference service by undergraduates. This will be the case because the more the knowledge, skills and abilities in the use of the computer and related devices, the more the use of electronic reference service will not be a difficulty.

Conclusion

Undergraduate students will utilize the electronic reference service if they have the necessary computer self efficacy. Even though the undergraduates might be motivated to use this service as a result of their information needs, they will only achieve little if they do not have the required know-how on how to post their queries online, how to send email and related services. University libraries that want to be relevant know the importance of providing electronic

reference service. The era that university libraries only provide traditional reference service seems to be passing away. University libraries in Nigeria should not be stuck in this waning practice. All hands must be on desk to ensure that university libraries in Nigeria move with the trend by providing the different forms of electronic reference service to the benefits of the patrons.

Recommendations

1. In order to ensure that reference librarians provide the latest forms of electronic reference service. The library's management should organize periodic workshops where experts will be invited to train the librarians on how to render these services electronically.

2. To sustain the use of electronic reference service by the undergraduate students, current awareness service must be carried out periodically to inform the student community of the available electronic reference service and how they can access them. The electronic and traditional notice boards in all faculties and departments can be used this.

3. The challenge of lack of epileptic power supply can be addressed through the dedication of the university's management in raising funds that can be used to improve the power situation. The alumni can be reached out to and other public spirited individuals and organizations. With the needed funds, alternative power supply like solar, battery powered inverters and power generating sets will improve the situation.

4. In order to ease the burden of finance on the undergraduates, free Wi-Fi services should be provided with the university campus so that they can access the Internet and contact the reference librarian without spending so much on data. It is equally important for the individuals in charge of Internet connectivity to ensure that the bandwidth is large enough to provide fast Internet service.

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