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JUSTINA N. EKERE DR.

*University of Nigeria, Nsukka*, justina.ekere@unn.edu.ng

Charles Obiora Omekwu

*University of Nigeria, Nsukka*, charles.omekwu@unn.edu.ng

Chidinma M. Nwoha.

*University of Nigeria, Nsukka, Nigeria*, chidinma.nwoha.174399@unn.edu.ng

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# USERS' PERCEPTION OF THE FACILITIES, RESOURCES AND SERVICES OF THE MTN DIGITAL LIBRARY AT THE UNIVERSITY OF NIGERIA, NSUKKA

**Justina N. Ekere-Ph.D**  
**Nnamdi Azikiwe Library**  
University of Nigeria, Nsukka, Nigeria  
[Justina.ekere@unn.edu.ng](mailto:Justina.ekere@unn.edu.ng)

**Charles O. Omekwu-Ph.D**  
Department of Library and Information Science,  
University of Nigeria, Nsukka, Nigeria  
[charles.omekwu@unn.edu.ng](mailto:charles.omekwu@unn.edu.ng)

**and**

**Chidinma M. Nwoha.**  
Department of Library and Information Science,  
University of Nigeria, Nsukka, Nigeria  
[chidinma.nwoha.174399@unn.edu.ng](mailto:chidinma.nwoha.174399@unn.edu.ng)

## **Abstract**

***Purpose:*** This study examined users' perception of the facilities, resources and services of the MTN digital library at the University of Nigeria, Nsukka with regards to the effectiveness and efficiency of the library system.

***Design/Method/Approach:*** The descriptive survey research design was adopted for this study. It was appropriate for this study as a useful method for assessing attitudes or opinions towards programmes, individuals, organizations and events. Four objectives and four research questions were formulated to guide this study. A convenience sampling technique was used and a sample size of 196 registered users of the MTN Digital Library, UNN was evaluated for this study. Instruments for data collection include a well structured questionnaire designed to elicit information from the library's users and an observation checklist designed to support the results of the questionnaire. 213 questionnaires were distributed to the users of the library with a return rate of 92%. The study employed the use of frequency table, percentages, mean scores and ranking as statistical measures for data analysis.

***Findings:*** From the findings of the study, it was concluded that the general perception of users towards the facilities, resources and services of the MTN digital library, UNN is highly satisfactory. Respondents were very highly aware of and satisfied with the availability of e-resources such as the World Wide Web, WIFI and search engines as opposed to online indexes and abstracts, video CDs, CD-ROMs, online databases and portals. Results also showed that services such as online internet search services, e-mail services and online reference services were provided at the MTN library at higher extents compared to other services. It was therefore recommended that the library offer different information access and delivery mechanisms to users to widen the limited scope of the resources and services currently employed to serve them. Other

recommendations include the employment of dedicated and willing staff, use of newsgroups and online forums to discuss and consult users, continuous review of the digital library system, training and support of software developers and technicians to enhance digital library services, provision forums where users can lodge their complaints concerning the inefficiency or effectiveness of the library system, provision of a communication and feedback mechanism should between the library and the MTNF to see to the effective maintenance and sustainability of the digital library project etc.

**Implication:** This study has serious implications for libraries in Nigerian higher education institutions as the line between the use of academic libraries and the use of the internet for research is still very obvious. In more developed countries these lines are virtually non-existent, because most academic libraries enjoy full Internet connectivity. Manpower training in the use of technology is another issue that is being raised here. Librarians must be trained in the use of current technologies to aid them in the discharge of their duties. The results of this study have implications for the university management and staff, students, the MTNF and NetLibrary, the university and library administrations, researchers and lecturers.

**Originality/Value:** The originality of this study lies in its examination of the facilities, resources and services of the MTN digital library at the University of Nigeria, Nsukka from the users' perspective. This study identifies critical issues related to the effective operation of the digital library system and the utilization of its facilities, resources and services by clients. Its values relates to its immense contributions to MTNF, NetLibrary and Nigerian universities and students especially in this information age where Nigerian educational institutions face the challenges of globalization and information explosion.

**Keywords:** Digital Library, Facilities, Resources, Services, Perception, Library Users, MTNF Nigeria, University of Nigeria, Nsukka.

**Paper type:** Empirical.

## **Introduction**

Libraries have evolved over time with technology as recently, traditional libraries containing a large number of printed documents are being transformed to paperless libraries, with the capacity for limitless volumes of information to be contained in digitized formats. Digital libraries are increasingly becoming part of school systems in many countries in Africa. Even though Africa is reputed to be a late comer in the adoption of ICT in education, the continent is making strides to tap the benefits of the ICT-driven education sector. A good part of the stride is to find out the challenges faced by the prime beneficiaries of technology, the students. Thus, in the case of digital libraries, it is actually uncertain how much students of universities avail themselves of the multimedia facilities of digital libraries.

The University of Nigeria (UNN), a federal university founded in 1955, was formally opened on 7<sup>th</sup> October, 1960. The MTN Foundation established its digital connect library within the institution on the 5<sup>th</sup> June, 2009 as its 3<sup>rd</sup> phase in the MTN Universities connect project after the Universities of Lagos and ABU, Zaria (the first and second phases of the project respectively). According to Chief Victor Odili, a director of MTN Nigeria, at the commissioning of the fourth and final phase of the project, the essence of the MTN connect Digital Library to this institution is for the purpose of “advancing education and arming our youths with the

requisite skills they need to excel in the ever-dynamic world". This was the reason behind which the Universities Connect project was conceived (Pomare, 2013).

Thus in 2009, the MTN foundation for ICT partnered with the Nnamdi Azikiwe Library of the University of Nigeria, Nsukka to establish a functional resource center equipped with 128 computers that are subscribed to so many websites to aid the research needs of students and lecturers. The project is an always-on wired and wireless network covering the entire geography of the four campuses of the University and consisting of fiber optics network provided by MTN, extending from Lagos to the Nsukka Campus, Enugu Campus and Ituku-Ozala Campus whilst the Aba campus is looped in through microwave transmissions. Therefore, this ICT infrastructure unleashes a whole lot of possibilities for the university as students in their rooms, halls of residence or in their lecture halls can wirelessly connect to the internet (Adepetun, 2010).

### **Statement of the Problem**

The essence of the introduction of the MTN connect digital libraries to academic universities in Nigeria is basically to provide online resources to staffs and students in order to bridge the knowledge and digital divide between the developed and developing countries, enhance educational infrastructural development and provide educational resources for effective learning. Unfortunately, digital libraries in Nigeria seem to be plagued with the challenges of gross under funding of libraries and education, existence of erratic and epileptic power supply, unstable nature of the National Information Technology Policy as was approved in 2001, lack of comprehensive and adequate knowledge of ICTs among most Nigerian information professionals or Technophobia, limited bandwidth available/poor connectivity etc. these problems have been dwindling the quality of services and resources provided by digital libraries in the nation.

Finally, there seems to be lack in research that specifically examines MTN Digital Library systems in Nigeria from the users' perspective, thus this study not only intends to fill in the missing links in these vital knowledge gaps but also intends to investigate into user's perceptions of the various facilities, resources and services of the MTN connect digital library in the University of Nigeria as well as providing possible solutions on how these facilities, resources and services can be enhanced to meet user requirements.

### **Purpose of the Study**

The general purpose of this study is to evaluate the perception of users' towards the facilities, resources and services of the MTN Foundation Digital Library in the University of Nigeria, Nsukka. This study has the specific objectives to:

1. Ascertain the level of satisfaction of users with the functionalities of facilities at the MTN Library.
2. Determine the levels of awareness of users to the e-resources available in the MTN digital library
3. Ascertain the level of satisfaction of users with the e-resources available at the MTN library.
4. Identify the extent of the services provided at the MTN library to enhance user satisfaction.

### **Research Questions**

This study was predicated on the following research questions:

1. What is the level of satisfaction of users with the functionalities of facilities at the MTN Library?

2. What is the level of awareness of users to the e-resources available in the MTN digital library?
3. What is the level of satisfaction of users with the e-resources available at the MTN library?
4. To what extent do the services provided at the MTN library enhance user satisfaction?

### **Significance of the Study**

After the successful completion of this study, it is expected that it will be of great significance to the following groups: students, lecturers, library staff, the library management and the MTN/Net Library board as well as researchers, educational planners and government agencies. The results of this study, in addition to the information generated, will provide useful information to library managers and staff in the identification of possible solutions to the problems of library digitization in university libraries as well as how to carry on with Digital Library services to user even after the contract with MTN has expired. It will aid in the provision of guidance to librarians on the application of appropriate techniques in the provision of Digital Library services to users.

The study will provide useful information to lecturers and educational planners on the need to provide quality learning, up to date information and teaching information literacy through online databases and to students and researchers on strategies for making fruitful and effective use of digital library services. Finally, this study will be beneficial to the MTN/Net library board in the sense that the findings of this research would aid to justify the resources and efforts put in by MTN in ensuring quality Digital Library services to the institution as well as aiding to evaluate the objectives set forth by the foundation (MTN). The government will also stand to gain from this research as it will help create an impact in policy formulation with regards to the National Information Technology Policy in the country.

### **Scope of the Study**

This subject focus of this study is an investigation on how users perceive the facilities, resources and services available at the MTN connect Digital Library in Enugu State. The study specifically covers the MTN Digital Library at the University of Nigeria, Nsukka.

### **Literature Review**

#### **Concept of Digital Library**

A digital library is a collection of digital documents or objects. This definition is the dominant perception of many people of today. Nevertheless, Smith (2001) defined a digital library as an organized and focused collection of digital objects, including text, images, video and audio, with the methods of access and retrieval and for the selection, creation, organization, maintenance and sharing of collection. Though the focus of this definition is on the document collection, it stresses the fact that the digital libraries are much more than a random assembly of digital objects as they retain several qualities of traditional libraries such as a defined community of users, focused collections, long-term availability, the possibility of selecting, organizing, preserving and sharing resources etc. The term 'Digital Library' may be understood in different ways, and thus may be named differently. Chowdury and Chowdury (2000), Bishop et al. (2000), and Borgman (1999) draw attention to both the complementarities and contradictions in various definitions as terms such as electronic library, virtual library, hybrid library, gateway library, library of the future, and library without walls are used, sometimes synonymously with digital library, sometimes to denote a subset, or a superset, of it whilst at other times to denote a rather different concept.

There is more than one reason or purpose for which a digital library can be developed. When designing a Digital Library, the starting points are its intended usage and the corresponding user needs (Fuhr et al, 2007). One would agree that among all the purposes, serving its users is the main purpose of a digital library. Digital libraries are used in a wide variety of ways and to support a multitude of needs across different domains such as academic, clinical and business (Adams and Blandford, 2006). Libraries in the private and public sector, as well as government agencies and educational institutions have realized this, and as a result digital library systems are being adopted at a rapid rate (Slovney, 2004). The need for developing a digital library is based on the following reasons:

- To increase access to resources and facilitate new research
- To aid conservation / preservation and add value to the collection of the parent organization
- To offer consistent access, give flexibility, provide enhanced capabilities for analysis and manipulation of information / data and to “save the time of the users”
- To support e-learning and online research
- To supplement traditional print resources, and integrate multimedia library resources on a common platform
- To increase productivity, and provide better service to users
- To make collections accessible to concurrent users
- To deliver a complete and complex round-the-clock set of aggregated information services irrespective of users’ location. (Kesavan, 2009).

The benefits of a digital library are multiple since they are built to deliver personalized library caliber knowledge directly to their users without being caught in the web of unorganized and unmanaged information. It has the goal to perform all functions of the traditional library in an online fashion in addition to other services only available in the present digital world. According to the UNESCO Institute for Information Technologies in Education (2003) digital libraries provide educational resources for electronic education. Okenna (2006) states that digital libraries create easy access to records of human knowledge, room for resource sharing around the globe, interconnectivity among networked libraries, inter library activity such as inter-library loan and lending as well as up to date information to its users”.

### **Concept of Library Users**

Digital libraries serve communities of people and are created and maintained by and for people. In other words, people and their information needs are central to all libraries whether digital or otherwise and as such efforts to design and implement digital libraries must be rooted in the information needs, characteristics and contexts of the beneficiaries of the library; the users, in order to ensure their acceptance by them and other application communities (Fuhr et al., 2007). According to Nwalo (2003) the library user is undisputedly, the most important person in any library setting. The library user is the focal point to the 21st century library and information services, as the library primarily exist to satisfy the user (Aina, 2004). This is the reason why the mission statement of any library always reflects the determination of the other components of the library to render excellent services to library users. As such, a library is said to be productive when the library users are satisfied. So, who is a library user?

Nwalo (2003) defined library users as anybody who visits the library with the purpose of exploiting its resources to satisfy his information need. The underlined word "visits" as used in the 21st century, include remote access to the library portal or website. Aina (2004) sees the term

"user" to include all those who avail themselves of the services offered by a library. To Snow (2008), the term encompasses various terms such as patrons, clients, information users, information seekers, consumers, readers, etc. these terms can be used interchangeably, because they all apply to those seeking the services of a library.

The satisfaction of library users is a function of the quality of information product(s) or resources received, the quality of information system as well as library facilities and services provided to access the information product. Therefore, satisfaction is a function of three main sources – quality of the information product, the information system and the services that make the information product available. These three levels of measure of satisfaction are defined by the information resources, facilities and services in this study. These sources of satisfaction, when properly harnessed may contribute to users' overall satisfaction (Sirkin, 2003). The accuracy, completeness, precision, and relevance of the information materials obtained from public libraries by a user are measures of the product performance (Iwhiwu and Okorodudu, 2012).

### **Facilities in Digital Libraries**

According to the International Federation of Library Association (IFLA) the minimum standards for information facilities to be provided by libraries include reading tables adequate enough for users, sitting chairs, book shelves, library space, fans, lighting, ventilation, flooring, restaurant, location of exit point, notice board/bulletin, photocopiers, vehicle parking space, computers, carrels, periodical racks, circulation desks and other facilities that would make users comfortable for reading (IFLA, 2001). Other facilities thus exist that emphasize e-learning. These include electronic media such as radio, television, cable satellite, the internet etc. These media give wide publicity to events, objects, discoveries, scientific findings, new products, and new services. (Chiemeke et al., 2007).

Library information resources are better utilized when relevant facilities such as reading tables, chairs, book shelves, ICTs among others are available. The availability of facilities enhances the ability of public libraries to render necessary services to users. Therefore, the integration of the three variables will bring about user's overall satisfaction with digital libraries. Johari and Zainab (2007) reported that facilities provided in a library are customer focused. The types of facilities or services in a university can be divided into three, the front line services, the basic services, and ancillary services (Nurulhuda et al., 2009). The front line services include online public catalogues, Online Public Access Catalogues (OPEC), the library website and user educational programmes. Basic services directly influence user readiness and access the collections for to do their course work and courses, presentation and librarian, printing and computer facilities, and the library book borrowing and reference schedule. The ancillary services include facilities of indication of the directions inside the library, suitable library business opening hours, providing the necessary areas besides providing of light reading materials. MAMPU (2009) stated that a new and quality service and facility is said to be of satisfactory level if it is able to fulfill the needs of and satisfy its customers. Parasuraman et al. (1994) in Kim-Soon, Nurulhanira and Abd Rahman (2013) developed the service quality model (SERVQUAL) based on the transactional prescription which makes comparison between the expected and outcome perceptions of customers with regards to a specific service. It also concluded with suggestions that the library needs to improve on those issues related to the library services and facilities. It has again emphasized the importance of good library services and facilities to support user's satisfaction as there is significant relation between the magnitude of value of the library facilities, resources and service and library user's satisfaction.

## Resources in Digital Libraries

The term “Resources” means different things to different people depending on the area of application. In libraries, resources are integrated contents consisting of documents, databases, e-books, e-journals, links to other resources and multimedia materials (Okore et al., 2009). Digitized materials refer to converting information materials from other formats into digital formats. Some digital resources will be permissible to furnish information in full text whilst others will be limited to metadata. Some resources will be freely accessible for anyone from anywhere in the world whilst others will have limited accessibility due to the library’s policy, for cost related issues and for authentication (Islam, 2011).

The Library of Congress Collections Policy Statements Supplementary Guidelines (2008) defined an electronic resource as any work encoded and made available for access through the use of a computer. It includes electronic data available by:

- Remote access referring to the use of electronic resources via computer networks; and
- Direct access (fixed media) referring to the use of electronic resources via carriers (e.g., discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment.

Examples of electronic resources include, but are not limited to: web sites, online databases, e-journals, e-books, electronic integrating resources, and physical carriers in all formats, whether free or fee-based, required to support research in the subject covered, and may be audio, visual, and/or text files (Ugwu and Onyegiri, 2013). Okore et al. (2009) also defines electronic information resources as any information resource that is accessed via the internet. This definition is extended to include CD-ROMs because CD-ROM resources can be accessed online. They identified specific types of electronic information resources as consisting of electronic books (e-books), electronic journals (e-journal), and indexes, collections of journal articles, reference works, digital collections, databases such as OARE, JSTOR, AGORA, HINARI, EBSCOHOST etc. and websites. These information resources do not fly into the library or find themselves in the library by accident and as such there should be coordinated efforts to select, acquire, organize and maintain them.

A library resource or tool’s function is defined by its intended use and/or content. Digital resources collection could be subscription based or developed and customized using local information resources or can be a combination of both. Materials and equipment in a library include both information resources and the tools used to access them. Some examples include visual materials, news or other media sources and archives, portals that provide links or urls relevant to particular disciplinary topics, online reference digital readers, resources, digital film or video, maps, online or digitized documents, audio materials, data archives, digital facsimiles, curricular materials and web sites created by other faculty and/or other institutions, personal online diaries (blogs) etc. other online information resources, including bibliographic databases, electronic reference books, search engines for full text collections, digital collections of data and data sets (Harley, 2007).

E-resources are useful because of the volume of information they contain and because of the convenience of being able to access them both on and off-campus at any time (Okore et al. (2009). A number of reasons have been advanced for preference of Digital information resources over print resources by libraries and information centers. Some of these reasons, according to Iwehabura (2009) include the ability to provide faster and easier access to current information by users in various places such as homes, offices and other workplaces, hostels and dormitories;



easy storage and the possibility of sharing the same information resources among many users at a time, saving space with relatively easy maintenance and easy linkage to indexing and abstracting databases. The internet for example, provides the opportunity to access a wide range of topics on different subjects. It also allows students, staff and other researchers to retrieve information from diverse sources such as e-journals, e-books, databases, newspapers and other sources. Furthermore, it offers the students the opportunity to control their learning and helps them to have interactions with information pertaining to their needs (Jones and Madden, 2002; Harley, 2007). Digital information resources are used for academic and research activities in higher educational institutions. Internet resources such as online databases, e-books, and e-journals are among the electronic information resources used for academic purposes (Iwehabura, 2009). The importance and wide ranging scope of digital library resources for general communication, information retrieval and instructional delivery to support teaching and research activities in tertiary educational institutions is acknowledged worldwide. Commenting on the advantages of electronic resources to users, Dadzie (2005) writes that electronic resources are invaluable research tools that complement the print – based resources in a traditional library setting. Their advantages, according to her include: access to information that might be restricted to the user due to geographical location or finances, access to more current information, and provision of extensive links to additional resources related contents. Naushad (2005) also finds that speedy publication and availability on the desktop are the key advantages that attract research scholars.

### **Services in Digital Libraries**

Library Services provide access to resources and information, both traditional and electronic. A digital library service is an assemblage of digital computing, storage, and communications machinery together with the software needed to reproduce, emulate, and extend the services provided by conventional libraries based on paper and other material means of collecting, storing, cataloguing, finding, and disseminating information (Gladney, 2004). Digital library services are services that are delivered diligently over computer networks. These services have enhanced scholarly communication, a rise in computational science, the new role of databases, shared cataloguing and computer networking for collaborative relationship within the library community, online public access, abstracting and indexing schemes etc (Buckland, 2000).

According to Covey (2002) Users want to work in highly personalized and malleable online environments i.e. environments that present them with the information and services they actually need at any one time. In line with the above statement, the operational lessons for the library are hence twofold:

- (1) Users want seamless presentation of collections and services, irrespective of where, by whom, or in what format they are managed; and
- (2) Libraries should consider deploying user-profiling technologies that enable users to configure a networked information environment that meets their specific needs.

Hernon and Altman (2006) emphasized the following four aspects of service quality in a library: excellence, value, conformance to specifications, and meeting and exceeding the expectations of library users. Meeting the needs of library users is the first step towards providing excellent library services. Devadason and Lingam (2006) introduced an information needs identifier (INI) for identifying the information needs of various types of library users. The major steps in the process of identifying information needs were: study of a subject of interest to the organization/client, study of the organization and its environment, study of the immediate

environment of the clients, study of the clients, a formal interview, identification and recording of information needs, and analysis and refinement of the identified information needs. The knowledge of these needs would aid the delivery of quality services in libraries.

## Methodology

The descriptive survey research design was adopted for this study. The six objectives and six research questions which were formulated to guide this study were not only be effective for the collection of data from a large population but also useful for studying the various problems and conditions as regards user's perceptions towards the facilities, resources and services of the MTN digital library in the University of Nigeria, Nsukka. A convenience sampling technique was used to select a sample size of 213 registered users of the MTN digital library from a population of 7,103 respondents comprising of all registered students and staff of the library. The area of study was Nsukka located in the south eastern region of Nigeria, Enugu State. Instruments for data collection include a well-structured questionnaire and an observation checklist. 213 questionnaires were distributed to the users of the library. The study used frequency counts, percentages, mean scores and ranking as statistical measures for data analysis. The Research questions formed the basis for data analysis.

## Findings of the study

A total of 213 copies of the questionnaire were distributed at the library and a total of 196 copies representing 92% were retrieved from the respondents of the library. The data obtained from this was organized and analyzed using mean average and percentages which are presented in tables as follows:

**Table 1: Age Range of Respondents**

S/N	AGE RANGE	FREQUENCY	PERCENTAGE(%)
1	15 – 24	138	70.41%
2	25 – 34	39	19.90%
3	35 – 44	19	9.69%
4	45 and above	—	—
	<b>Total</b>	<b>196</b>	<b>100%</b>

**Table 2: Academic Level of Respondents**

S/N	ACADEMIC	FREQUENCY	PERCENTAGE(%)
1	Undergraduates	171	87.24%
2	Postgraduates	25	12.76%
3	Staff	—	—
4	Lecturers	—	—
5	Visitors	—	—

<b>Total</b>	<b>196</b>	<b>100%</b>
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**Table 3: Faculties of Respondents**

<b>S/N</b>	<b>FACULTY</b>	<b>FREQUENCY</b>	<b>PERCENTAGE(%)</b>
1	Agricultural Sciences	21	10.71%
2	Arts	23	11.74%
3	Biological Sciences	22	11.23%
4	Education	33	16.84%
5	Engineering	15	7.65%
6	Pharmaceutical Science	12	6.12%
7	Physical Sciences	14	7.14%
8	Social Sciences	47	23.98%
9	Veterinary Medicine	9	4.59%
	<b>Total</b>	<b>196</b>	<b>100%</b>

Tables 1 and 2 above show the average age range and academic level of users of the MTN digital library calculated in percentages. The data presented in Table 1 shows that majority of the library's users (about 70.41%) fall between the ages of 15 – 24. In accordance, Table 2 shows that this 70.41% of users are likely to be undergraduates who make up the majority of the library's users at 87.24%. Table 1 equally shows that a lesser percentage of users fall within the age range of 25 – 34 at 19.90% and 35 – 44 at 9.69% most of whom, as portrayed in Table 2, could be postgraduates with a lesser number of undergraduates in these age groups. In addition, data from table 3 also shows that most of the library's users are from the faculties of Social Science, Education and Arts who occupy 23.98%, 16.84% and 11.74% respectively of the library's users as against students of the faculties of Veterinary Medicine (4.59%), Pharmaceutical Science (6.12%), Physical Sciences (7.14%) and Engineering (7.65%) who scarcely patronize the library.

The implication of this data is that mostly undergraduate students patronize the MTN digital library either for academic or other purposes. It also proves that students between the ages of 15 and 24 make use of the library more than students between the ages of 25 and above. This could be because they are likely to be more ICT literate and technologically inclined than their elderly counterparts. It could also mean that students from 25 and above are either not adequately aware of the services of the MTN library, prefer to browse in cybercafés to avoid protocols in the library or they have their personal computers with which to browse. The majority of these users stem from the faculties of social sciences, education and arts.

***What is the level of satisfaction of users with the functionalities of facilities at the MTN Library?***

In answering this research question, a frequency count was conducted and the average response of each item was computed and ranked in their order of satisfaction. An observation checklist was also prepared to support the results of this question. In the table below, the mean scores of 0.00 – 0.59 = Not Available (NA), 1.00 – 2.49 = Not Satisfied (NS), 2.50 - 3.49 = Satisfied (S) and 3.50 – 4.00 = Very Satisfied (VS).

**Table 4: Student responses on their level of satisfaction with the functionalities of facilities at the MTN Library.**

S/N	FACILITIES	VS	S	NS	NA	Mean Av.	Rank	Decision
1	Tables & chairs	120	65	11	0	3.56	1 <sup>st</sup>	VS
2	Library environment (generally)	101	88	7	0	3.48	2 <sup>nd</sup>	S
3	Fan and/or Air-conditioning	90	88	18	0	3.37	3 <sup>rd</sup>	S
4	Library lighting and ventilation	85	96	15	0	3.36	4 <sup>th</sup>	S
5	High capacity printers	48	125	19	4	3.16	5 <sup>th</sup>	S
6	Networked computer systems	52	116	28	0	3.12	6 <sup>th</sup>	S
7	Photocopying machines	56	90	50	0	3.03	7 <sup>th</sup>	S
8	Scanners	9	124	63	0	2.72	8 <sup>th</sup>	S
9	Computer web cameras	8	60	105	23	2.27	9 <sup>th</sup>	NS
10	Projectors	8	30	136	22	2.12	10 <sup>th</sup>	NS
11	Facsimile transmission systems (Fax)	9	16	26	145	1.43	11 <sup>th</sup>	NS
12	Instructional facilities	3	21	30	142	1.41	12 <sup>th</sup>	NS
13	Toilet facilities	0	0	45	151	1.23	13 <sup>th</sup>	NS
14	Bulletin boards	0	6	15	175	1.18	14 <sup>th</sup>	NS
15	Desks & Storage Lockers etc.	0	9	12	175	1.15	15 <sup>th</sup>	NS

With reference to research question 1 of the study, the above table 4 indicates that respondents were very satisfied with the functional conditions of the tables and chairs at the MTN library showing a mean weight of 3.56 closely followed by the general library environment at 3.48, air-conditioning at 3.37 and lighting and ventilation at 3.36. However, respondents expressed great dissatisfaction with the functionality of other facilities such as the desks and storage lockers with a mean weight of 1.15, bulletin boards at 1.18, toilet facilities at 1.23, instructional facilities at 1.41 etc. The poor states of some of these facilities in the library have serious implications on the effective performance of the library system.

In addition, results from the observation checklist below (Table 5) prove that respondents tend to be dissatisfied with some of the facilities such as the desks and storage lockers and toilet facilities because they are restricted to library staff alone. Facilities such as the fax machine, computer web cameras, projectors and bulletin boards also show no satisfaction because they are not available in the library. However, users expressed satisfaction with the photocopying machine but the observation checklist proves that such facility is equally not available in the library.

**Table 5: Functionalities of the Facilities in the MTN Digital Library, UNN.**

S/N	FACILITIES	AVAILABLE			
		FUNCTIONAL		NOT FUNCTIONAL	NOT AVAILABLE
		RESTRICTED	NOT RESTRICTED		
1	Networked computer systems		64	59	
2	Computer web cameras				✓
3	High capacity printers		1	1	
4	Scanners		2		
5	Photocopying machines				✓
6	Facsimile transmission systems (Fax)				✓
7	Projectors				✓
8	Fan and/or Air-conditioning		✓		
9	Library lighting and ventilation		✓		
10	Bulletin boards				✓
11	Tables & chairs		✓		
12	Desks & Storage Lockers etc.	✓			
13	Instructional facilities		✓		
14	Toilet facilities	✓			
15	Library environment (generally)		✓		

***What are the levels of awareness of users to the e-resources available in the MTN digital library?***

In answering research question 2, frequency counts were also conducted and the mean average for every item was analyzed and ranked in the order of their levels of awareness. An observation checklist was equally prepared to support the results of this question.

**Table 6: Student responses on their levels of awareness of the e-resources available in the MTN Digital Library**

S/N	E-RESOURCES	VHA	HA	A	NA	Mean Av.	Rank	Decision
1	The World Wide Web (www)	117	64	15	0	3.52	1 <sup>st</sup>	VHA
2	Wide Area Network (WAN) i.e. WIFI	110	58	26	2	3.41	2 <sup>nd</sup>	HA
3	Search Engines	88	72	36	0	3.27	3 <sup>rd</sup>	HA
4	Local Area Network (LAN)	70	66	46	14	2.98	4 <sup>th</sup>	HA
5	Servers	64	60	72	0	2.96	5 <sup>th</sup>	HA
6	E-journals	64	44	68	20	2.78	6 <sup>th</sup>	HA
7	E-books	60	44	68	24	2.71	7 <sup>th</sup>	HA
8	CD-ROMs	44	36	55	61	2.38	8 <sup>th</sup>	A
9	Portals	23	58	56	59	2.23	9 <sup>th</sup>	A
10	Online Public Access Catalogue (OPAC)	36	40	40	80	2.16	10 <sup>th</sup>	A
11	Online databases	22	50	54	70	2.12	11 <sup>th</sup>	A
12	Online Library catalogue	16	36	60	84	1.92	12 <sup>th</sup>	A
13	VSAT based Internet connectivity	8	44	64	80	1.90	13 <sup>th</sup>	A
14	Video CDs	5	35	60	96	1.74	14 <sup>th</sup>	A
15	Online indexes and abstracts	12	16	60	108	1.65	15 <sup>th</sup>	A

**Hints:** 0.00 – 0.59 = Not Aware (NA), 1.00 – 2.49 = Aware (A), 2.50 - 3.49 = Highly Aware (HA) and 3.50 – 4.00 = Very Highly Aware (VHA).

The results from Table 6 above showed that respondents expressed very high levels of awareness with the availability of the world wide web in the MTN library with a mean weight of 3.52 closely followed by high levels of awareness with the availability of WIFI (3.41) and search engines (3.27). However, lower levels of awareness were observed with the availability of online indexes and abstracts at a mean weight of 1.65 closely followed by other resources such as Video CDs (1.74), VSAT based Internet connectivity (1.90), online Library catalogue (1.92), online databases(2.12) etc. The implication of this result is that users are more familiar with using the web and search engines and are less aware of the availability of other useful resources such as portals, online indexes and abstracts and online databases which ought to prove more useful and reliable for research than the search engines. They also expressed moderately high levels of awareness towards E-journals (2.78) and E-books (2.71) which are also extremely useful for academic studies and research.

However, results from the observation checklist below shows that of all the 15 resources listed, only 5 of such resources are available and functional in the library. This proves that it is practically impossible for users to be aware of these resources such as E-books, E-journals, CD-ROMs, Video CDs in the library since they are not available for use.

**Table 7: Availability of E-Resources in the MTN Digital Library, UNN.**

S/N	E-RESOURCES	AVAILABLE	NOT AVAILABLE
1	CD-ROMs		✓
2	Video CDs		✓
3	Search Engines	✓	
4	VSAT based Internet connectivity		✓
5	The world wide web (www)	✓	
6	Servers	✓	
7	Online databases		✓
8	Portals i.e. pre-packaged research information in particular disciplines		✓
9	Local Area Network (LAN)	✓	
10	Wide Area Network (WAN) i.e. WIFI	✓	
11	Online Public Access Catalogue (OPAC)		✓
12	Online Library catalogue		✓
13	Online indexes and abstracts		✓
14	E-books		✓
15	E-journals		✓

***What is the level of satisfaction of users with the e-resources available at the MTN Library?***

This research question was answered by computing the mean scores of the responses of the users of the library on their satisfaction levels towards the e-resources employed in the library. These scores were ranked and presented as shown in table 6 below:

**Table 8: Student responses on their level of satisfaction with the e-resources available at the MTN Library.**

S/N	E-RESOURCES	VS	S	NS	NA	Mean Av.	Rank	Decision
1	Search Engines	120	68	8	0	3.57	1 <sup>st</sup>	VS
2	Wide Area Network (WAN) i.e. WIFI	104	68	24	0	3.41	2 <sup>nd</sup>	S
3	The world wide web (www)	108	60	24	4	3.39	3 <sup>rd</sup>	S
4	Servers	68	92	28	8	3.12	4 <sup>th</sup>	S
5	Local Area Network (LAN)	68	88	34	6	3.11	5 <sup>th</sup>	S
6	E-books	4	80	61	15	2.74	6 <sup>th</sup>	S
7	E-journals	32	84	60	20	2.65	7 <sup>th</sup>	S
8	Online databases	20	56	60	60	2.18	8 <sup>th</sup>	NS
9	Portals	17	55	60	64	2.13	9 <sup>th</sup>	NS
10	Online Public Access Catalogue (OPAC)	20	48	60	68	2.10	10 <sup>th</sup>	NS
11	CD-ROMs	21	30	56	89	1.91	11 <sup>th</sup>	NS
12	Video CDs	12	34	52	98	1.80	12 <sup>th</sup>	NS
13	VSAT based Internet connectivity	8	20	60	108	1.63	13 <sup>th</sup>	NS
14	Online Library catalogue	8	18	112	114	1.59	14 <sup>th</sup>	NS
15	Online indexes and abstracts	5	15	45	131	1.46	15 <sup>th</sup>	NS

**Hints:** 0.00 – 0.59 = Not Available (NA), 1.00 – 2.49 = Not Satisfied (NS), 2.50 - 3.49 = Satisfied (S) and 3.50 – 4.00 = Very Satisfied (VS).

Results from Table 8 shows that students portray a unanimous level of satisfaction towards the search engines available at the library with a mean weight of 3.57 giving a very satisfied level. They also expressed satisfaction with the use of the WIFI and World Wide Web at mean weights of 3.41 and 3.39 respectively and as well as with the servers (3.12), LAN (3.11) E-books (2.74) and E-journals (2.65). However, users were mostly not satisfied with the use of the online indexes and abstracts at a mean weight of 1.46 along with other resources such as the online library catalogue, VSAT based internet connectivity, video CDs, CD-ROMs, OPAC, online databases and portals all of which showed levels of no satisfaction.

The implication of this is that those resources which provide higher levels of satisfaction to users will be used more whilst those that derive little or no satisfaction will account for lesser use by users. A further finding from the observation checklist proves that some of these resources from which users derive no satisfaction from are not available in the library.



***To what extent do the services provided at the library enhance user satisfaction?***

The results for this research question were answered using the computed mean scores of the responses of users towards the extent of the services provided at the library. Ranks were also accorded to these responses as presented in table below:

**Table 9: Student responses on the extent of the services provided at the MTN Library to enhance user satisfaction.**

S/N	SERVICES	VHE	HE	LE	NA	Mean Av.	Rank	Decision
1	Online internet search services	104	80	12	0	3.48	1 <sup>st</sup>	HE
2	E-mail services	64	92	24	16	3.04	2 <sup>nd</sup>	HE
3	Online referenceservices	52	96	44	4	3.00	3 <sup>rd</sup>	HE
4	Management of online databases	8	20	80	88	2.76	4 <sup>th</sup>	HE
5	Customer care services	24	92	76	4	2.69	5 <sup>th</sup>	HE
6	Subscription services	32	96	40	28	2.67	6 <sup>th</sup>	HE
7	Awareness and workshop services	28	68	76	24	2.51	7 <sup>th</sup>	HE
8	News Groups/dialogue databases	16	50	60	70	2.06	8 <sup>th</sup>	LE
9	Electronic Document Delivery Services	12	44	60	80	1.94	9 <sup>th</sup>	LE
10	Interoperability services	20	27	60	89	1.93	10 <sup>th</sup>	LE
11	Technical training in ICT for staff and users	20	32	56	88	1.92	11 <sup>th</sup>	LE
12	Audio and Video Communication services	8	28	80	80	1.82	12 <sup>th</sup>	LE
13	Online inter-library services	8	24	40	124	1.57	13 <sup>th</sup>	LE
14	Digitized finding aids such as online indexes and Bibliographies	0	20	56	120	1.49	14 <sup>th</sup>	LE
15	Online cataloguing and classification services	0	0	120	136	1.31	15 <sup>th</sup>	LE

**Hints:** 0.00 – 0.59 = Not Available (NA), 1.00 – 2.49 = Low Extent (LE), 2.50 - 3.49 = High Extent (HE) and 3.50 – 4.00 = Very High Extent (VHE).

Table 9 shows the various services provided at the MTN library and their extent of provision as provided by users of the library. As revealed by users, the mean weight of 3.48 proves that online internet search services are provided at the MTN library at a higher extent than others. This is followed by other services provided at high extent in the library such as E-mail services at 3.04, online reference services at 3.00 etc. Results also prove that the online cataloguing and classification service is ranked lowest with a mean weight of 1.31 compared to other services provided at the library.

The implication of this is that users tend to visit the library mainly for its online internet search services followed by its e-mail, reference and other services. However, online cataloguing services are employed at low extent. In addition, although customer care services is rated at high

extent with a mean weight of 2.69, it is expected that a standard library provides customer care services at a much higher extent as customer care and satisfaction is the peak of librarianship.

## **Discussion of findings**

### ***The level of satisfaction of users with the functionalities of facilities at the MTN Library.***

From the data collected and analyzed, it was found that users' were generally very satisfied with the functional conditions of some of the facilities available at the library particularly with the tables and chairs, the general library environment, air-conditioning, lighting and ventilation. However, respondents expressed great dissatisfaction with the functionality of some of the facilities such as the desks and storage lockers, bulletin boards, toilet facilities, instructional facilities etc. This is in line with the findings of Iwhiwhu & Okorodudu (2012) who discovered in their research that users were satisfied with the library space, fans and air conditions, lightings and ventilations. However, their findings found that users expressed greater dissatisfaction towards the photocopier facility and computers.

Findings from the observations made by the researcher of this study showed that this dissatisfaction arose from the fact the some of these facilities such as the desks and lockers and toilet facilities are available but are only reserved for the staff of the library and not for the users whilst others such as the fax machine, computer web cameras, projectors and bulletin boards are not available in the library. This is supported by the findings of Ukonu, Wogu, and Obayi (2012) who, in their own investigation, found that respondents were neither aware of, nor exposed to the many multi-media resources boasted of by the staff of the UNN digital library. This equally entails that those facilities which are available in the library are employed at a low extent possibly due to inadequate funding of the library. This is supported by Ojedokun (2000) who stated that for effective digital library services to be achieved, there must be adequate funding and policies backed up by real government assistance as well as adequate infrastructural facilities.

### ***The levels of awareness of users to the e-resources available in the MTN digital library.***

Results of this study revealed that respondents expressed very high levels of awareness with the availability of the World Wide Web in the MTN library and high levels of awareness with the availability of WIFI and search engines. However, lower levels of awareness were observed with the availability of online indexes and abstracts, portals, online databases etc. This, according to John-Okeke (2012) in studying the usefulness and currency of e-resources in the MTN library, implied that users were more familiar with using the web and search engines and are less aware of the availability of other useful resources such as portals, online indexes and abstracts and online databases which ought to prove more useful and reliable for research than some of the information that may be obtained from search engines and the web. According to her, search engines are probably an additional provision to aid wider or general research and thus should not be more useful or important than other resources such as databases which tend to be more direct and specific to field study and research. In addition, observations by the researcher of this work attributed this awareness level to the fact that some of these e-resources identified are not present in the MTN library.

### ***The level of satisfaction of users with the e-resources available at the MTN library.***

Respondents portrayed a unanimous level of very high satisfaction with the search engines available at the library. They also expressed satisfaction with the use of the WIFI and World Wide Web as well as with the servers, LAN etc. This supports the findings of John-Okeke (2012) whose results equally proved that users found the Google search engine to be more useful compared to other e-resources employed in the library.

However, users were mostly not satisfied with the use of the online indexes and abstracts, online databases and portals all of which showed levels of no satisfaction. Additional findings from the observation checklist prove that some of these resources from which users derive no satisfaction from are not available in the library.

### ***The extent of the services provided at the MTN library to enhance user satisfaction.***

Results from data collected proved that online internet search services are provided at the MTN library at a higher extent compared to others. This finding is related to the research by Chiemkeet al.(2007) on users' perceptions of the use of academic libraries and online facilities for Research Purposes in Nigeria where it was found that users visit the Internet more often than academic library facilities for research purposes. Furthermore, Cisse (2004) asserts that services have evolved from the days of closed stacks through shelf browsing and card catalogues to the concept of open access catalogues, institutional repositories and internet facilities. This historic migration strives to satisfy the changing needs of library users through ease of access, interaction richness and low cost.

Other services provided at high extent in the library, based on this study include E-mail services, online reference services etc. Results also proved that online cataloguing and classification service is ranked lowest compared to other services provided at the library.

### **Implications of the study**

This study has serious implications for libraries in Nigerian higher education institutions as the line between the use of academic libraries and the use of the internet for research is still very obvious. In more developed countries these lines are virtually non-existent, because most academic libraries enjoy full Internet connectivity. In addition, this study has implications for the following groups:

#### **Implications for the University and Library Management**

The university management and staff will benefit from this research in terms providing adequate computer application services in the library coupled with the awareness workshops and training programmes which will be beneficial to both students and staff of the library.

#### **Implications for Students**

Students will additionally benefit from this since the findings of this study can be used as a guideline by both the MTNF and the university administration in the provision of functional, efficient and effective facilities, resources and services that foster user satisfaction, information access, dissemination and retrieval.

## **Implications for Researchers and lecturers**

Researchers and lecturers will benefit from this study as it would serve as a basis for enhancement and effectiveness of further research works on user satisfaction and perceptions towards digital library facilities, resources and services.

## **Conclusion**

Based on the findings of this study, it was concluded that the users were generally very satisfied with the functional conditions most of facilities at the library particularly the tables and chairs, the general library environment, air-conditioning and lighting and ventilation etc. However, they equally expressed dissatisfaction with the functionality of other facilities such as the desks and storage lockers, toilet facilities, bulletin boards, instructional facilities etc. mostly because they were either restricted for use by library staff only, are available at low extent or are not available in the library. Users were more aware of and portrayed a unanimous level of satisfaction with using the web and search engines for research purposes but are less aware of the availability of other useful resources such as portals, online indexes and abstracts and online databases which ought to prove more useful and reliable for research than some of the information that may be obtained from search engines and the web. This can largely be attributed to the facts portrayed by the observation checklist, that some of these resources are not employed or available in the library. Online internet search services were perceived as being provided at a higher extent compared to other services at the MTN library. Other services provided at high extent include E-mail and online reference services whilst online cataloguing and classification service was ranked lowest compared to other services provided at the library.

Finally, the provision of the facilities, resources and services at the MTN digital library, UNN looks promising and is generally satisfactory to the users of the library. This is inevitable owing to the increased rate of technological growth characterized by this information age.

## **Recommendations**

The university library environment is changing. Hence, University Librarians are advised to keep pace with these changes otherwise they will be left behind. Providing unlimited access to electronic information resources in the university digital libraries as well as keeping track of them is one way of keeping pace with these changes. The more the staff understands user preferences, the more a refined segmentation can be achieved. Hence, the library must try to offer different information access and delivery mechanisms, such as networked CD-ROMs, video-conferencing, downloading via the Web etc. to the users in order to widen the limited scope of the resources and services currently employed to serve users.

Students should be provided with a means or forum where they can lodge any complaints concerning the inefficiency or effectiveness of the facilities, resources and services provided at the library. In return, librarians and staff must be dedicated and willing to serve users as well as receptive to the feedback and suggestions from users. The use of newsgroups and online forums to discuss and consult users can also be adopted. In addition, a sort of communication and feedback mechanism should also exist between the library and the MTN foundation to see to the effective maintenance and sustainability of the digital library project. There must also be an act of perseverance on the part of both parties to ensure total compliance and continuity to the contract of agreement.

Librarians should also continuously review and improve the digital library system as a constant evaluation of the library will ultimately reveal the exact state of the library at any given point in time. Librarians must keep in mind that digital library technologies are meant to assist them and not to totally replace them or render them useless. In other words, the center of attention should still remain the same: the client and not the technology.

Finally, MTNF in collaboration with Net Library should see to the training and support of software developers and technicians with the necessary equipment to develop globally usable e-library and education software's. This will aid to enhance digital library services and promote effectiveness and proficiency in library services and student academic performance.

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