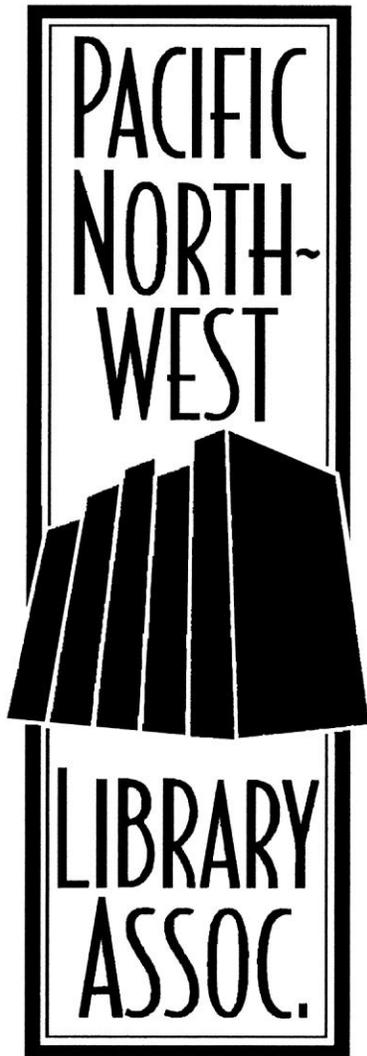


# PNLA QUARTERLY

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The *PNLA Quarterly* publishes both peer-reviewed and high-quality non-peer reviewed articles. Please indicate whether you would like your article to go through blind peer review when you submit it.

Authors should include a 100-word biography and mailing address with their submissions. Submit feature articles of approximately 1,000-6,000 words on any topic in librarianship or a related field. Issue deadlines are

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# President's Message

## Michael Burris



I spend a lot of time in my columns writing about the Board's plan to re-energize the annual PNLA conference and in so doing, carve out a niche in the crowded world of library associations. The PNLA conference is the cornerstone of PNLA's services, and it supports all of the Association's activities.

While the Board realizes that conference revenue is greatest where the bulk of the membership is located (Idaho, Montana and Washington), they also recognize that holding our conference in our other member states and provinces, Alaska, Alberta, and British Columbia, is also key to the continued success of the association. Talk to just about anyone who attended the Sitka conference or the Victoria conference (held jointly with WLA) and you will get glowing reviews. I say "just about" due to the little detail that neither conference brought much revenue to PNLA and, in fact, the Victoria conference lost money.

So while the Board was adamant that we need to put the emphasis on revenue earning conferences, we were just as adamant that the conferences in our other three members states/provinces were unique opportunities to have awesome conferences in some pretty spectacular locations and build support for PNLA at the same time.

For that reason, Board members (and members in general, from what I've heard) are really anticipating the 2012 conference in Anchorage. PNLA VP Heidi Chittim and Alaska Library Association Representative Sara Saxton have assembled a terrific conference team and have planned a truly one of a kind PNLA experience for this August.

However, we are faced with a situation not of our making that has the potential to seriously damage the 2012 conference. Some background...PNLA entered into a contract in April 2010 to hold the 2012 PNLA conference in Anchorage. In August of 2011 the PNLA Board became aware of a labour dispute at the conference hotel. The Board at that time expressed concern that the dispute would have a negative impact on the 2012 conference. We were also aware that, given PNLA's precarious financial situation, cancelling the conference would have a serious, if not fatal, consequence for the association. In short, we faced a cancellation

penalty of at least \$15,000. The decision of the Board in August of 2011 was to monitor the situation and hope for a resolution.

Fast forward to February 2012. It was clear then that the situation at the conference hotel was not going to have a resolution. It also became known to the Board that there was an active call for a boycott of the conference hotel that continues to this day. PNLA did not take any position on the labour dispute. However, whatever decision we subsequently made would have tremendous impact regardless of on the conference.

The Board had three options, to carry on with the conference at the Sheraton Anchorage, to cancel the conference outright and pay the cancellation penalty, or to move the conference to another location in Anchorage and pay the cancellation penalty.

We decided to solicit feedback from PNLA members and potential conference attendees. The results of the survey did not provide a clear answer regarding what the "right" choice was. It was clear that many people had already made arrangements to attend the conference, so cancelling outright was not an option. The Board reconvened and made the decision to proceed with the conference at the Sheraton.

This was not a decision that was made frivolously. The Board believes it ran counter to its fiduciary duty to the Association to knowingly undertake a course of action that would conceivably cause PNLA to go bankrupt.

We have been told that there have been no pickets at the Sheraton since last fall, but that does not guarantee they will not happen again. The Board realizes that attending the Anchorage conference will be an individual decision, but also hopes that members will see that the decision made by the Board was in the best interest of PNLA. We will be working extra hard to make the 2012 conference the excellent experience that our members have come to expect.

Thank you for your support of the Pacific Northwest Library Association.

## **From the Editor**

### **Mary Bolin**

The increasing international focus of the *PNLA Quarterly* is clearly evidenced by the wonderful papers in this very large Spring 2012 issue. Since the PNLA Board made the very wise and forward-looking decision to make the *Quarterly* an open-access e-journal, and even more since its equally-wise decision to make it a peer-reviewed journal, we have received more and more submissions from librarians in places like Nigeria, India, and elsewhere around the globe. We should be very proud of the prominence, visibility, and popularity of our journal with librarians in other countries. I know that we all enjoy and benefit from the perspective of our international colleagues.

# **Information and Communication Technologies and Women's Education in Nigeria: Challenges and Future Directions**

**Stella N.I. Anasi**

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## **Introduction**

Education is a basic human right. It is the key to the developing of human capabilities. In the last decade women education and development has attracted the attention of the international community. A number of conferences, seminars and workshops have been organized at international, national and local levels to issues related to women education and development. This is as a result of the growing awareness that "development or progress in peoples' welfare cannot be achieved where the needs and contributions of half of the world's population, women, are continually downgraded, marginalized or completely ignored" (National Population Commission, 1991 p.3). Leahy and Yermish (2003) also observed that although women constitute half of a given nation's populace, they represent far less than fifty per cent of the nation's intellectual capital, skilled labour pool, and economic contribution.

To address this situation, The Fourth World Conference on Women was held in Beijing, China in 1995. The platform for Action of this conference states that:

Women should be empowered by enhancing their skills, knowledge and access to information technology. This will strengthen their ability to combat negative portrayals of women internationally and to challenge instances of abuse of power of an increasingly important industry... Indeed women's access to new information and communication technologies (ICTs) has become increasingly imperative if gender parity in education will be achieved.

Recognizing the transforming power of information and communication technology in educational processes countries such as Canada have linked electronically over 10,000 schools for the provision of a host of on-line services (Hamelink, 1997). In fact, educators and policy makers affirmed that information and communication technologies are of paramount importance to the future of education anywhere in the world and Nigeria cannot afford to lag behind. The deployment of information and communication technologies at all levels of education – primary, secondary and tertiary institution no doubt will contribute to the meeting of the Millennium Development Goals (MDGs) of gender parity in education.

## **The Capabilities of Information and Communication Technologies (ICTs)**

Information and communication technologies potentially enable the transformation of teaching, research and learning processes at all levels. It is a technological revolution which holds great prospect in accelerating women education and empowerment.

According to Liverpool (2002, p.163) the uses of ICT in education include:

1. ICT as object: This refers to learning about ICT and is mostly organized in specific courses. What is learnt depends on the type of education and the level of the. Education prepares students for the use of ICT in education, future occupation and social life.
2. ICT as an assisting tool: ICT is used as a tool, for writing assignments collecting data, analyzing data, documentation, communicating research findings.
3. ICT as a medium for teaching and learning: This includes the use of ICT for drill and practice exercises, simulations; and educational networks.
4. ICT could be used as a tool for school administration and management of record such as examination results, timetable, school fee and school attendance.

Literature has shown that information and communication technologies have profound effect in education industry in particular. Jaffer, Ng'ambi and Czernicwicz (2007) examined the potential impact of ICT and concluded that the role of ICT in education includes providing a catalyst for rethinking teaching practice; developing the kind of graduates and citizens required in an information society; improving educational outcomes and improving the quality of teaching and learning. Wims and Lawler (2007) maintained that the application of ICT in education can address some of the education problems which also affects women education in developing countries in general and Nigeria in particular. These are shortage of qualified teachers, lack of educational opportunities, inadequate access to learning and teaching resources, low enrolment rates and high dropout, inefficient educational administration, and content –centred curricular.

Conversely, ICTs in education has the capability of:

- Increasing the number of qualified teachers;
- Increasing educational opportunities;
- Promoting greater access to learning and teaching resources;
- Increasing the number of women enrolment and reducing the rate of dropout;
- Promoting competency and performance – based curricula.

### **Increasing the number of qualified teachers**

The deployment of ICT in education can accelerate the training of pre and in-service teachers. Distance teacher training opportunities will abound with the use of sophisticated technologies. With greater access to open and distance learning women who are often restricted by family commitments are likely to take advantage of this. The increase in the number of trained and skilled female teachers who will serve as role models in schools is likely to influence girls' enrolment in schools (Hilton, 2000).

### **Increasing educational opportunities**

Virtual and distance learning through ICTs facilities such as telephone, mobile phone, e-mail, internet, virtual libraries create wide learning opportunities for people who live in

isolated and remote areas. Such population includes women facing social barriers, women in rural areas and disabled women who have been historically excluded from educational opportunities (World Bank, 2005).

### **Promoting greater access to learning and teaching resources**

Network technologies according to World Bank (2005) will broaden the availability of quality teaching and learning resources. Access to diverse and vast collection of online resources will help teachers to design curricular that will meet the socio-economic needs of women. Furthermore, ICT will facilitate interaction and sharing of knowledge and learning experiences quickly and cheaply over long geographic distances and this will sustain women's interest in educational activity.

### **Increasing the number of women enrolled and reducing the number of dropouts**

According to the 1996 UN Human Development Report, Sub-Saharan African girls accounted for only 19% enrolment at secondary school level in 1992. The same report indicates that girls living in rural areas of Sub-Saharan African within poor families are among those with the least access to education in the world. More so, girls are often the first to dropout from school if there is financial crisis in the family (Mabawonku, 2001). In Nigeria, the National Population Commission (2001) affirmed gender differentials in schooling and in literacy levels, with women lagging behind.

But with the introduction of information and communication technologies into the school curriculum as a medium for teaching and learning the number of girls and women enrolment is likely to increase and school dropout reduced. A study of Information Village Project in Pondicherry reveals that access to contemporary ICTs have a role to play in encouraging participation in the formal educational system. The result of the study indicates that children's use of computers and CD-ROM educational materials resulted in considerable decline in school dropout rate (Green, n.d ).

By and large, the use of ICTs in education is likely to provide a favourable learning environment which will promote interaction, collaboration and peer – to peer – tutoring which will make learning more interesting and enjoyable. Usage of new technologies, such as the internet and computers no doubt will make learning experiences real. For example, in 2001, the World Links commissioned a gender assessment to determine whether girls and boys are being impacted differently by their educational programmes which integrates technology into learning in countries such as Senegal, Ghana, Uganda and Mauritania. The result of the study indicates that learning outcomes seem to be greater for girls who were connected to the Internet, the girls focused more on academic related issues than on leisure. The findings also suggested that there was more impact on girls' communication and reasoning skills than boys', and that female students also expressed increased self-esteem (Green, n.d )

### **Improving the quality of educational administration**

Effective use of new technologies can help to improve the quality of administrative activities and processes which includes records and human resource management. Online registration of student will help to monitor enrolment dropout and achievement (World Bank, 2005) Women and girls can take advantage of online registration to enroll in formal and non-formal education. Similarly, with the aid of ICTs teachers can monitor their performance and progress and ensure that their interest is sustained.

## **Promoting competency- and performance-based curricula**

Traditionally teaching and learning have emphasized content rather than competence. Teachers are expected to teach the content of the curricula through lectures and presentations, interspersed tutorials and learning activities. This encourages memorization and rote learning which is often boring. With contemporary ICTs there is a paradigm shift from content centred curricular to competency and performance – based curricular (Oliver, 2002). Such curricular that promote student – centred and problem – based learning, flexible and online (anytime) learning will attract many women who previously were unable to participate in educational activities.

## **The State of ICTs in Educational Institutions in Nigeria**

Research findings reveal that Nigeria educational institutions have lagged behind in exploiting the capabilities of ICTs in teaching and learning. However, a number of laudable initiatives have taken place and some are underway.

The Federal Universities in Nigeria are being gradually connected electronically through the Nigerian Universities Network (NUNET). The project is geared towards networking computer and information resources in the Universities through intra-campus, inter-University and global electronic connectivity (Sani and Tiamiyu, 2005). A study conducted by Sani and Tiamiyu (2005) shows that two-third of the universities (federal, state and private) surveyed have access to e-mail and CD-ROM services; half of the universities have Web browsing and cyber café facilities while less than a third have access to OPAC (Online Public Access Catalogue) national and global databases. In some of the universities surveyed teachers had started giving students assignments requiring the use and exploitation of the Internet and other web resources, internet training for students is also being organized in a few of the universities. Adetiminrin (2007) also examined ICTs availability and utilization in Ahmadu Bello University, Babcock University and Imo State University. The study found out that ICTs that were available include computers, scanners, photocopiers, CD-ROMs, fax machines, and LCD multimedia projectors. These were used for assignments, class work, projects, seminars and term papers.

A collaborative initiative tagged MTN Universities Connect Project has taken off in University of Lagos, Ahmadu Bello University and University of Nigeria, Nsukka. The project sponsored by MTN Foundation and Net Library Nigeria in Partnership with Sabinet Online, South Africa was designed to provide access to electronic information resources worldwide for teaching, research and learning in tertiary institutions (Mohammed, 2007).

Currently, most universities in Nigeria are restructuring academics and research work to reflect the global shift towards e-learning. For instances, the University of Lagos, Nigeria has initiated the virtual learning environment (VLE) project by acquiring the fibre-optics infrastructure, Very Small Aperture Terminal (VSAT), Sun Microsystems and Visual Data Centers (Anasi, 2006). Almost all the universities in Nigeria have portals for students' online registration.

The application of newer ICTs in University libraries in Nigeria is in progress. The use of virtual libraries to improve the quality of learning, teaching and research materials in the libraries was conceived by the Federal Ministry of Education. The initiative dubbed the National Virtual Library Project has commenced in some federal universities (Okebukola, 2002). For example the University of Calabar Virtual Library centre is well equipped with 16 computers as well as 100 socket work systems unit computers with functional internet

connectivity (Lawal and Ani, 2007). Indeed some progress has been made as regards ICTs deployment in Nigerian University system.

The Colleges of Education and Polytechnics are also expected to be connected in the second phase of the National Virtual Library Project. (Lawal and Ani, 2007). With the support of UNESCO the Colleges of Education has introduced ICT in their sector. The National Teachers' Institute is also at the verge of launching a comprehensive ICT Plan (Liverpool, 2002).

At the secondary school level, the MTN Foundation has commenced the schools Connect project since 2004. The project was designed to provide computers connected to the Internet to 49 schools in 12 states in Nigeria. The project is aimed at bridging the digital divide by equipping Nigerian students and teachers with relevant ICTs skills and also exposing them to modern trend in research and academic related exercises. Currently, over 100,000 students and 5,000 teachers had access to digital training and also to vast network of electronic information resources across the globe through this project (Akparanta, 2008). This definitely will boost teaching and learning in public secondary schools across the country.

In private secondary and primary schools it has become fashionable to showcase their ability to acquire computers as way of attracting more students even when such facilities are not deployed and integrated into teaching and learning. However, some private schools such as Chrisland College Idimu, Lagos, Vivian Fowler Memorial College for Girls, Ikeja, Lagos, Chrisland High School, Victoria Garden City, Lagos, Hallmark International Secondary School, Ondo, Ondo State etc, are blazing the trail by engaging the services of Maths Clinic International in the teaching of Mathematics. The company trains teachers on how to develop classroom lessons on computers for digital presentation using educational software and ICT equipment. These teachers are trained to conduct Mathematics clinic for pupils in primary schools and students in secondary schools. The digital presentation of mathematics lessons makes learning interesting, more interactive and practical (Maths Clinic International, 2008).

From the foregoing, it is evident that ICT driven education is in progress in Nigeria. This may increase the quality of education which could have positive influence on the enrolment of women. It will also create learning opportunities for illiterate women who desire to be educated. The capabilities of ICTs are a challenge to women in their struggle to take advantage of the increased learning opportunities offered by ICT driven education,

### **Challenges of ICT in Women's Education**

There are a number of factors impeding wholesale ICT deployment in education at all levels in Nigeria. These factors impact negatively on women education in particular and educational advancement in general. Such factors that inhibit ICT deployment in women education includes: inadequate fund, lack of ICT literacy and awareness, poor infrastructure, lack of local content, lack of women participation in ICT policy making.

#### **Inadequate funds**

Inadequate funding inhibits most educational institutions from acquiring and deploying ICT facilities in teaching and learning. Insufficient government expenditure on education over the years and especially at this period of generalized economic crisis accounts for poor ICT utilization in education. The high cost of ICT facilities and connections further exacerbates the situation.

### **Lack of ICT literacy and awareness**

ICT awareness entails knowing about the existence and importance of ICT tools and their applications. The teaching professional in Nigeria is dominated by women and many of them still lack ICT awareness and necessary skills for deploying ICTs in education. Liverpool (2002) observed that there were practically no experiences in teacher education programmes that have any link with ICT and that even at University level ICT activities that have links with teaching and preparation of future teachers were weak. In fact, he stressed that academic staff in the Universities who had little opportunity to learn about ICT, developed mistrustful attitudes regarding what they could do with information and communication technologies. This implies that ICT is yet to be appreciated as a means of creating efficiency and cost-effectiveness. This goes a long way with the fact that the mindset of most women even those in the teaching profession is still stuck to the old ways of doing things. More so, majority of women in the rural areas lack basic literacy, they have no access to education much less to ICT literacy. Green and Trevor-Deutsch (2002) maintained that the problem of illiteracy must be overcome before women can benefit from ICTs.

### **Lack of local content**

One of the most significant constraints to women's access to education and ICT is the lack of content that is relevant to their lives. The worldwide web has little or no content relevant to the developing countries. The content found on the web at present is not very useful to illiterate women in rural Nigeria. Green and Trevor-Deutsch (2002) observed that 'women encounter barriers to the use of ICTs when the learning content is not directly relevant to their livelihood, and when it does not value their knowledge, wisdom and experience'. They also acknowledged the fact that "most of what is on the Internet tends to be foreign and there is lack of local information resources and services for people in their local conditions". This is often compounded by the lack of content in local languages. Most of the content available in the Internet is in English and English is not the language of the learners. This poses a language problem (Green and Trevor-Deutsch, 2002).

### **Poor infrastructure**

Poor infrastructure affects the efforts to deploy ICTs in education. The infrastructure that needs to be in place to ensure effective and efficient ICTs deployment in women education includes telecommunications, electricity, transport, good road network and technical expertise. All these are grossly unavailable especially in rural communities where majority of Nigerian women resides (Anasi, 2005).

### **Lack of women participation in ICT policymaking**

A major concern regarding ICTs and women education is that women are not equitably involved in ICTs decisions and legislations. Women ought to be active participants in ICTs decision making to ensure gender sensitive programme design and implementation. This is often referred to as gender mainstreaming. Gender mainstreaming according to Green (n.d) ensures that every "organization's programmes and policies include gender analysis from inception and that strategies to ensure gender equity are implemented in all facets of the organization's operations. Gender mainstreaming acknowledges that there are no 'gender neutral' decisions. Therefore there must be a deliberate effort to ensure equitable participation of women in all phases of ICT consultation, acquisition, installation and exploitation.

## Conclusion and Future Directions

Education is one of the most important elements for achieving national development. ICT in turn can contribute towards the achievement of Education for All and especially promote women empowerment and gender equality. Leahy and Yermish (2003) citing Wolfensohn (2000) affirmed that:

No country has succeeded without educating its people; education is the key to sustaining growth and reducing poverty. Countries that have invested in education for women as part of their educational priorities, and as part of an integrated approach to societal development have seen slower population growth, faster economic growth, and a higher level of social cohesion. It is time for all countries to put aside their doubts and fears about educating women, and give it the highest priority.

With globalization and increasing demand for a highly skilled workforce, women cannot afford to remain at a crossroad. Women and girls must not be left behind in the digital revolution, they must take advantage of the capabilities of ICTs in education to achieve their full potentials and contribute meaningfully to national development.

To increase gender equity in ICT utilization, practical and deliberate steps that should be taken includes:

- showcasing many different computer packages and applications that addresses critical challenges and aspirations of women ;
- making rules for accessing computers which guarantee sufficient opportunities for women and girls;
- increasing teacher consciousness of gender issues in relation to ICT;
- paying explicit attention to the career prospects of women and girls who achieve at school and in ICT;
- avoiding a situation in which working with computers will be identified with abstract technical knowledge;
- avoiding gender bias in curriculum materials associated with ICT;
- creating role models through ' peer learning' for women and girls;
- making sure that in mixed group-work equal time is spent at the keyboard;
- increasing the number of female teachers using computers as role-models for women and girls;
- offering ICT teaching that is embedded in the normal curriculum subjects and not as a threatening male dominated enclave within the school.

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## **Information Needs and Information-Seeking Behaviour of Agricultural Students AAT LAUTECH, Ogbomosho**

**Gboyega Adio, PhD**

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### **Introduction**

Adequate knowledge about information needs and seeking behaviour of users is vital for developing library collections, services and facilities to meet their information needs effectively (Majid and Kassim 2000). Similarly, information is indispensable for human development. It can be considered as an important resource that contributes towards the

development of a nation. It provides the core for the development of knowledge, the basis for innovations, the resources for informed citizenry, and as a result, becomes the key commodity for the progress of a society. Acknowledging the impact of information in human development, Mooko and Aina (2007) opine that every individual, whether literate or illiterate, needs information for a variety of issues essential for his or her survival.

This paper argues that the information seeking behavior and information source(s) could have an impact on the quality of information obtained. Identifying the sources of information and information seeking behavior of library users will help to understand users' challenges, addressing these challenges, which will in turn improve the overall quality of information obtained from the library. Sequel to this, this paper tends to investigate the information needs and information seeking behavior of Agricultural Students in Ladoke Akintola University of Technology (LAUTECH), Ogbomoso.

## **Literature Review**

### **Information needs and information seeking behavior**

Kakai, et al., (2004) have defined information-seeking behavior as an individual's way and manner of gathering and sourcing for information for personal use, knowledge updating, and development. However in the study of Majid and Kassim (2000) Information seeking behavior is a broad term, which involves a set of actions that an individual takes to express information needs, seek information, evaluate and select information, and finally uses this information to satisfy his/her information needs. According to Leckie, Pettigrew, and Sylvain (1996) Factors that affect information seeking behaviour include personal reasons for seeking information, the kinds of information being sought, and the ways and sources with which needed information is being sought. This corroborate with the testimony of Macevieiute (2006) and Bigdeli (2007) in their findings that information needs vary according to area of specialization. Similarly, various other factors may determine the information seeking behaviour of an individual or a group of individuals, such like; the purpose for which information is being required, the environment in which the user operates, users' skills in identifying the information, and sources preferred for acquiring the needed information.

### **Existing models of information behaviour**

The models reviewed in this section are by no means an exhaustive survey on the field, nor are they discussed at any depth. They are presented to provide a theoretical and historical background, as they are the main models which inspired the proposed new model.

Brookes defined information as that which affects the world view or knowledge of the person receiving it. His 'fundamental equation' (below) states:

$$K[S] + \Delta I = K[S + \Delta S]$$

...which states in its very general way that the knowledge structure  $K[S]$  is changed to the new modified structure  $K[S+\Delta S]$  by the information  $\Delta I$ , the  $\Delta S$  indicating the effect of the modification. (Brookes 1980: 131)

Traditionally, information theorists have paid most attention to the processes undertaken by people when they approach a system (a library, a database) for information. Ellis (1989) for instance, identified a list of characteristic actions within information seeking behaviour:

- starting
- browsing / chaining / monitoring
- differentiating
- extracting
- verifying
- ending

#### **Four models by Wilson**

Figure 1 shows Wilson's 1981 model, as modified in 1999. He used Ellis' list as characteristics of information seeking behaviour, which he placed within the context of information need arising out of a situation (of the person's environment, social roles and individual characteristics). That same context presents barriers which must be overcome before information seeking takes place.

Figure 1: Wilson's 1981 model of information-seeking behavior

Wilson later (1999) described this 1981 model as a 'macro model or a model of the gross information-seeking behaviour', suggesting that it implies hypotheses about information context without making them explicit, and that it does not indicate the processes whereby a person is affected by context, nor how context then affects his or her perception of barriers to information seeking.

By 1996 Wilson had expanded this model as shown in Figure 2 (reported in Wilson, 1997). Aspects of the 1981 model have been developed, in particular the possible kinds of barriers which must be surmounted by the information seeker, and the possible forms his or her information seeking may take.

Figure 2: Wilson's 1996 model of information behaviour

With the next model (Figure 3) presented in 1999, Wilson pointed out that *information search behaviour* is a subset of *information seeking behaviour* and that *information seeking behaviour* is in turn only a subset of all possible *information behaviour*. As such, the existence of modes of information behaviour, other than information seeking, is implied.

Figure 3: Wilson's 1999 nested model of information behaviour

Also in 1999, Wilson combined the work of Ellis (1989) and Kuhlthau (1991), each of whom had suggested phases or stages which tend to occur within information seeking. In Figure 4, Wilson pointed to similarities between the two while emphasizing that the movement of the seeker between characteristic seeking behaviour can occur in varying sequence.

Figure 4: A stage process version of Ellis's behavioural framework and comparison with Kuhlthau's stage process model - by Wilson 1999

## View of information behaviour

In Wilson's models, the main information behaviour depicted is information seeking, although another 1981 model (Figure 1) does depict *information transfer, exchange and use*. A number of models presented in recent years as models of information behaviour (such as Niedzwiedzka 2003; and Pharo 2004) are also mainly concerned with information seeking. Exceptions include Fisher, whose 'Information grounds and information behaviour' model (2005: 187) includes *information giving* and *information use* and Erdelez's model of information behaviour, which includes what she calls *other forms of information behaviour* (2005: 180).

Wilson used the term *information behaviour* to describe 'those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way and using or transferring that information.' (Wilson 1999: 249) but subsequently described information behaviour as 'the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking and information use.' (Wilson 2000: 49)

In the light of this wider definition, a multitude of alternative strategies proposed by the literature can be seen as information behaviour. Below is a list of identified common examples:

People encounter information by actively gathering information towards a goal, but also by:

- routine information gathering (Krikelas 1983; Savolainen 1995; Williamson 1998) and
- picking up information by chance in the course of other activities. (Krikelas 1983; Savolainen 1995; Williamson 1998; Erdelez 2005)

People respond to information by seeking more information, but also by:

- sharing or spreading information, creating documents, telling other people. (Krikelas 1983; Wilson 1994; Haythornthwaite 1996; Williamson 1998; Pettigrew 1999; Rioux 2005)
- taking mental note (non specific goal or goal not imagined yet) (Krikelas 1983)
- avoiding or ignoring information (Chatman 1996, 2000; Wilson 1997; Solomon 2005)
- disputing or disbelieving information (Chatman 1999)
- hiding and / or destroying information (Chatman 1996, 2000)

## Identifying and Supporting Information-Seeking Behaviors

The problems of identifying and supporting different information-seeking behaviors have been addressed by a number of researchers, including Ellis (1989) and Hancock-Beaulieu (1990). Here, we discuss our own approach to this issue, as used in the design of two different IR systems. Belkin, Marchetti & Cool (1993) have suggested that information-seeking behaviors (or, in their terms, information-seeking strategies - ISSs) can be characterized according to some small set of dimensions or facets which define a space of ISSs.

Figure 1 is a summary of the four facets which they tentatively suggest as minimum necessity for the range of ISSs which have been observed. These facets, *goal* of the interaction, *method* of interaction, *mode* of retrieval and *type of resource* interacted with, have been identified through observation and classification of information-seeking behaviors in a variety of settings. Their suggestion is that any ISS can be characterized according to its values on these facets, or dimensions. Thus, the explicit combination of poles of each facet, in Figure 2, leads to a set of 16 prototypical ISSs.

Method: Sc = Scan; S = Search

Goal: L = Learn; S = Select

Mode: R = Recognize; S = Specify

Resource: I = Information; M = Meta-information

Belkin, Marchetti & Cool (1993) point out that, in the course of a single information seeking episode, a person may engage in several such ISSs, moving from one to another as knowledge, goals, intentions, and so on, change through the course of the interaction. They suggest that, by characterizing ISSs according to their underlying dimensions, both support for the single ISS currently being engaged in, and support for movement from one ISS to another can be specified within a single IR system design.

They describe an interface, BRAQUE, which does provide such support, allowing the user to move one ISS to another according to the user's (self-defined) current goals and knowledge, especially in response to the results of interaction within the system.

Belkin & Cool (1993), and Belkin, Cool, Stein & Thiel (1993), starting from the same concept of dimensions of ISSs, suggest further that each region of the ISS space could have associated with it, not only a general information-seeking behavior, but a prototypical interaction or dialogue structure, which takes place between the user and the rest of the IR system. They propose, on this basis, an IR system design which provides dialogue patterns for the different ISSs, and sequences of ISSs, based on a library of specific cases of real interactions, organized according to the prototypical ISS structures. This allows for explicit interactive and mixed-initiative support for specific information-seeking behaviors, seen as complex combinations of ISSs, which change as the user changes in her/his interaction with the texts.

A key problem arising in these approaches to identification and support of information seeking behavior, is that they are explicitly concerned just with behavior, and have little to say about why a person might engage in one form of information-seeking in any particular situation. In order to be able to provide support other than just offering the user a choice of support mechanisms (for instance, predicting appropriate ISSs in specific circumstances), it is necessary to establish relations between the behaviors and some other characteristics of the user, such as the person's goals or problematic situation. This, in turn, suggests that we need some classification of such factors, and a means to establish how they are affected by other aspects of the situation in which the user is embedded. Dervin (1983), in her classification of 'information gaps' provides one possible approach to this issue.

Belkin & Marchetti (1990) have suggested cognitive task analysis as another means for identifying relations between user characteristics and specific information-seeking

behaviors. Brajnik, Guida & Tasso (1988), and Daniels (1986) have suggested that the construction of specific kinds of models of the user, by other parts of the system, could be used to establish such relations.

### **Related works**

Bruce (2005) states that, "information plays a significant role in our daily professional and personal lives and we are constantly challenged to take charge of the information that we need for work, fun and everyday decisions and tasks." Meanwhile, According to Wilson (2000), information-seeking behavior includes "those activities a person may engage in when identifying their own needs for information, searching for such information in any way, and using or transferring that information.

Shokeen and Kushik (2002) report on a study about information seeking behaviour of social scientists in the universities of Haryana. It was evident from the study that most of the social scientists visit the library daily. The preferred search tools were indexing and abstracting periodicals and citations in articles. Current journals and books were preferred sources of information.

Moreover, significant body of literatures exists on the information needs and information seeking behaviour of different user groups across disciplines. For instance Adedibu and Adio (1997) carried out an empirical study on information needs and information seeking patterns of medical students at LAUTECH, where it was discovered that medical students in LAUTECH had no orientation on the use of library which made them to depend mainly on the library staff for assistance. Similarly, Holland and Powell (1995) looked at a longitudinal survey of information seeking and use habit of some engineers. Part of their recommendation was that instruction on how to access information should be incorporated as part of continuing education and on the job training to keep them abreast of information technology.

Tahira (2008) studied *Information needs and seeking behaviour of science and Technology teachers of the University of the Punjab, Lahore* where he reveals that the focus of researchers has been shifted to this important area of research. However, the situation seems different in Pakistan where scarcity of studies exist on information- seeking behavior as revealed by Anwar (2007), who establishes the need of such studies in a Pakistani context.

Kuhlthau (1993) describes information behaviour as "seeking of the meaning" and Dervin (1983) understands it as 'sense making'. information behaviour foundations are embedded in the models of information seeking introduced by Ellis (1989), Kuhlthau (1991), Wilson and Walsh (1996). Nahl (2001) distinguishes ACS (Affective - Cognitive - Sensomotoric) as the unit of the information behaviour and characterizes it more detail. Wilson (2006) introduces the activity theory as a framework relevant for information behaviour field and develops an inspiring process model of activity.

### **Study Area**

Ladoke Akintola University of Technology is an autonomous public institution in the south-western part of Nigeria. This university was established in April, 1990 and has been adjudged by the Nigeria University Commission (NUC) as the best state university in the country. LAUTECH is the only university in Nigeria jointly owned by two states (Oyo and Osun). Currently, LAUTECH runs three academic programmes; pre degree science

programmes, undergraduate programmes, and post graduate programmes. The university has two campuses and is currently made up of six faculties and a college with population of over 25,000 students and 3,000 employees. (lautech.edu.ng)

As a faculty in a university of science and technology, faculty of Agricultural sciences in LAUTECH offers a five year programme leading to the award of bachelor of technology degree in the following six (6) departments;

1. Agricultural Economics
2. Agricultural Extension and Rural Development
3. Crop Production and Soil Science
4. Crop and Environmental Protection
5. Animal Production and Health and \
6. Animal Nutrition and Biotechnology

The five year programme is inclusive of a year internship programme which focuses on capacity building in Agricultural enterprises to develop entrepreneurship, employability and social enterprises in students.

However, the main objectives of the faculty through the six affiliated departments are to produce graduates who are;

1. versatile and can fit into many niches such as agricultural officers in the nation's Ministries of Agriculture,
2. Scientists in International Organizations,
3. Job creators in the field of agriculture and related disciplines and
4. Can extend the frontier of knowledge in Institutions of higher learning both within and outside the country. (Faculty student handbook, 2010.)

The field of Agriculture is multidiscipline; hence, it becomes imperative for agricultural students and research scientist to seek information in order to obtain higher level of knowledge in their fields which will enable them to carry out academic course work, researches, and project papers among others successfully using a variety of information sources and services provided by the library. Meanwhile, Unavailability of timely and appropriate information to users of Agricultural information, *such as* research scientists, policy makers, planners, extension personnel, and farmers is a prominent factor responsible for acute food shortage in Africa as pointed out by L.O Aina (1991).

### **Objectives of the study**

The followings are the objectives of this study

1. To find out the information needs of Agricultural students at LAUTECH
2. To determine how they seek and use the information they need
3. To determine the effectiveness of the information sources available to Agricultural students at LAUTECH
4. To equally find out constraints to the effective utilization of these information and

5. Finally, to recommend possible ways of improving the library services at LAUTECH towards meeting these needs

### **Research Methodology**

Survey research technique was adopted for the study. The population of the study comprised of three departments out of the six departments in the faculty of Agricultural Sciences in LAUTECH simply because as at the time of carrying out the research only the three departments used for the study were having students at higher levels, the remaining three departments were just springing up. Moreover, Because of the large population of the participants, stratified sampling technique was adopted as the researchers adopted each of the three departments used within the faculty to represent a stratum of the population. The three strata used were: department of Agricultural Economics and Extension, department of Animal Production and Health and the department of Agronomy. A total of 180 questionnaires were distributed but 150 were retrieved which thus represent a response rate of 83 percent. The data was analyzed using frequency tables and percentages.

Altogether 150 respondents were used for the study. The questionnaires were distributed and administered among male and female participants in the higher level classes of the departments. The senior class students were specifically used for the study because they constitute the research conducting classes.

The major data collection instrument used for this study was questionnaire, the nature of the study called for the usage of an instrument that would collect a significant amount of responses within a reasonable length of time. The questionnaire was constructed based on similar studies of information needs and behaviour in different disciplines. The researchers recruited and trained four (4) research assistants. This study was carried out between January and April, 2011.

### **Results and Discussion**

The first section of the questionnaire dealt with the gender information about the respondents. Of the 150 respondents, 71 (47.3 %) were male and 79 (52.6 %) were female. The acquired data shows that a large number of the respondents (88 percent) were in the age bracket 21-30 years. Similarly 55 (36.6 %) represented the department of Agricultural Economics and extension, 45(30 %) came from Animal Production and Health department, while 50 (33.3 %) constituted the department of Agronomy.

Table 1: distribution of respondents according to sex, age, departments and levels

VARIABLES		FREQUENCY	PERCENTAGE %
SEX	Male	71	47.3
	Female	79	52.6
	Total	150	100
AGE	Under 20	0	0
	21-30	132	88
	31-40	16	10.6
	41 and above	2	1.3
	Total	150	100
DEPTS	Agricultural Economics & extension	55	36.6
	Animal Production and Health	45	30
	Agronomy department	50	33.3
	Total	150	100
LEVEL	400 L	72	48
	500 L	78	52
	Total	150	100

Source: Field Survey Analysis

A further study was conducted to identify the various reasons attributed by some respondents to their visiting the library. Table 2 presents seven reasons attributed to library visits as obtained through findings carried out in this study. The reasons include; internet surfing (60 %), textbook consultation (74 %), consultation of newspapers and magazines (52 %), consultation of journal articles (30 %), browsing through library collections (72 %), browsing through daily news caption (60 %), chatting with friends, (43 %) among others.

Table 2: Reasons attributed by respondents to library visit

Reasons for library visit	To surf Internet	To consult textbooks	To consult newspapers & magazine	To consult journal articles	Browse through library collections	Browse through daily news	To chat with friends
Response						Captions	
Strongly agree	48 (32%)	57 (38%)	45 (30%)	27 (18%)	63 (42%)	51 (34%)	32 (21%)
agree	42 (28%)	54 (36%)	33 (22%)	18 (12%)	45 (30%)	39 (26%)	33 (22%)
Undecided	32 (21%)	3 (2%)	12 (8%)	15 (10%)	3 (2%)	23 (15%)	5 (3%)
disagree	13 (9%)	24 (16%)	30 (20%)	44 (29%)	24 (16%)	23 (15%)	30 (20%)
Strongly disagree	15 (10%)	12 (8%)	30 (20%)	47 (31%)	15 (10%)	15 (10%)	51 (34%)
Total Respondents	150	150	150	150	150	150	150
Total %	100%	100%	100%	100%	100%	100%	100%

Source: Field Survey Analysis

The study sought to find out from the respondents various information sources they use during information needs and were asked to indicate the frequency in which they were used; it then reveals that internet is the most preferred source of information followed by consultation with library officers. For instance, of the 150 respondents used for the study 56 i.e. 37.3 percent claimed they got their information from the internet, 33 (22 %) depend mainly on library staff, 19.3 percent source their information from textbooks and monograph, also 8 percent revealed that they depend majorly on journal articles more than any other source of information, 2.6 % contacted reference sources, 2 (1.3 %) source their information from conference proceedings, while 8 (5.3 %) source their information from thesis and dissertations, surprisingly no respondents consult card catalogue, the supposed gateway to the library holdings. As shown in table 3 below.

Table 3: source of information

Source	frequency	Percentage
Internet	56	37.3
Consult library staff	33	22
Card catalogues/OPAC	-	-
Textbooks & monographs	29	19.3
Journal articles	12	8
Reference Sources	4	2.6
Abstract/ indexes	-	-
Bibliographies	-	-
Conference proceedings	2	1.3
Thesis and dissertation	8	5.3
Pamphlets/ newsletter	-	-
CD-ROM Databases and products	6	4
Total	150	100

Source: Field Survey Analysis

The study further sought to find out from the respondents the level of effectiveness of the sources listed. Findings reveal that internet is the most effective method of getting information with 34.6 % supports followed by textbook and monograph (16 %). However, some of the least effectively considered sources were abstract/ indexes, bibliographies carrying 2.6 % each and conference proceedings with 0.6 %. The researchers discovered variation in the use of sources as well as their consideration for effectiveness depending on the programme of study of the respondents.

Table 4: effectiveness of information sources

Effectiveness of Sources	frequency	Percentage
Internet	52	34.6
Consult ref-librarian	24	16
Card catalogue /OPAC	3	2
Textbooks & monographs	26	17.3
Journal articles	20	13.3
Reference Sources	4	2.6
Abstract/ indexes	4	2.6
Bibliographies	5	3.3
Conference proceedings	1	0.6
Thesis and dissertation	7	4.6
Pamphlets/ newsletter	-	-
CD-ROM Databases and products	4	2.6
total	150	100

Source: Field Survey Analysis

As regards the level of usage of the listed sources, it appears from table 5 below that internet had the highest level of patronage (74 %) followed by textbook and monograph (66 %) while the least was card catalogue/OPAC with 8 % patronage

Table 5: level of information source usage

sources	Usage %
Internet	74
Textbooks & monographs	66
Thesis and dissertation	63
Consult ref-librarian	61
Reference Sources	54
Journal articles	45
Conference proceedings	41
CD-ROM Databases and products	39
Bibliographies	32
Abstract/ indexes	23
Pamphlets/ newsletter	21
Card catalogue/ OPAC	8

Source: Field Survey Analysis

The respondents were asked to indicate the number of hours spent in the library on weekly basis hopefully to find out if it has something to do with their information needs. Findings reveal that majority of the respondents spent fewer hours in the library. For instance 36 % spent less than 2 hours a week in the library while only 8 % spent above 10 hour per week in the library. Majority of the respondent spent between 3-5 hours per week in the library which can be considered as relatively low for a senior class level. Obviously length of hours spent by respondents in the library has not contributed to their information needs.

Table: 6 hours spent per week in the library

hours spent /week in library	%
1-2 hours	36
3-5 hours	44
6-10 hours	12
10 and above hours	8
Total	100

Source: Field Survey Analysis

Respondents were further asked to indicate whether they visit other libraries when there is need and for what purpose. 38 % answered in the affirmative, over half (54.6 %) of the respondents answered in the negative, while 11 or 7.3 % did not respond. Meanwhile none of the respondents answered for what purpose they visit other libraries.

Table 7: Visitation to other Library for Information needs

Do you visit other libraries?	Frequency	%
Yes	57	38
No	82	54.6
No response	11	7.3
Total	150	100

Source: Field Survey Analysis

When respondents were asked about their patterns of searching for information needs in the library, amazingly, 1 % agreed to the use of card catalogue, 60 % search directly from the shelf, 50 % make use of library staff assistance and 48 % seek for assistance from friends while 43 % use other means of search patterns like checking already consulted books by other users but still on reading tables, regularly consulted material on reserve shelf among others.

Table: 8 Pattern of information search in the library

Search pattern in the library	Catalogue cabinet	Directly on the shelves	Through the assistance of library staff	Through the assistance of friends	Others (%)
Response					
Strongly agree	-	48 (32%)	36 (24%)	35 (23%)	33 (22%)
agree	2 (1%)	42 (28%)	39 (26%)	38 (25%)	32 (21%)
Undecided	14 (9%)	12 (8%)	17 (11%)	16 (10%)	14 (9%)
disagree	56 (37%)	24 (16%)	32 (21%)	32 (21%)	36 (24%)
Strongly disagree	78 (53%)	24 (16%)	27 (18%)	32 (21%)	36 (24%)
Total respondents	150 (100%)	150 (100%)	150 (100%)	150 (100%)	150 (100%)
Total %					

Source: Field Survey Analysis

In the light of this study, it becomes evident as shown in Table 9 that some constraints exists to meeting information needs of users in the library, prominent among the constraints were; Poor internet facility in the library (96 %), Unwillingness of library staff to assist in information search (82 %), Inadequacy of computers in the library to surf the internet (80 %), lack of access to current journal articles and thesis (65 %) others are as shown in table 9 below.

Table 9: Constraints to meeting Information needs

Constraints	Percentage
No/Poor internet facility in the library	96
Inadequacy of computers in the library to surf the internet ne	80
Unwillingness of library staff to assist in information search	82
Inadequacy of library opening hours	72
Lack of access to journal articles & thesis (%)	65
Lack of access to news papers & magazines	64
Inadequacy of current journal articles	36
Lack of relevant textbooks and monograph	25

Source: Field Survey Analysis

## Conclusion

Certain conclusions can be drawn from a careful analysis of the findings of this study. The finding shows that most agricultural students in LAUTECH lack basic knowledge on how to use available resources and services in the library especially card catalogue/ Online Public Access Catalogue (OPAC) which are the pointers to location of material in the library. The study equally discovered lack of awareness on the part of the students as well as inadequate basic information retrieval skill on how to use the library independently.

Although Internet, reference librarian, Textbooks & monographs, Journal articles, Reference Sources, Thesis and dissertation were identified as the major sources used by respondents for acquiring information; internet was the most employed and the most effective source. Lack or poor internet facilities in the library were seen as one of the major constraint to meeting their information needs followed by inadequacy of computers in the library to surf the internet.

## Recommendations

Based on the findings of this study, the following recommendations are intended to improve the present situation:

- There is the need for aggressive information awareness to all academic departments and students to create awareness on available services and resources in the library.
- Orientation on information search tools should be given to undergraduates before embarking on research activities to enable student to maximize the use of library resources during researches.
- The library should make provision for an Online Public Access Catalogue (OPAC) service for users at the reader's services unit of the library.
- There should be efficient internet facilities that will allow students access to information all over the world, a good example of such is AGORA database that is uniquely produced for agricultural students.
- Computers should be provided in large quantity so as to accommodate students and staff of the faculty of agriculture and those of others.
- LAUTECH University library professional and supportive staff must always be willing and ready at all time to provide assistance to students who have little or no knowledge of using the library.
- The virtual library should develop their e learning resources to provide internet facilities, so that students can copy, download information material on CDs at cheaper rates

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## **Information Use by Managers for Strategic Planning**

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### **Introduction**

Everyone in an organisation participates in learning and contributes to knowledge creation. Frontline employees and lower-level supervisors and managers develop tacit knowledge and specialized know-how. Their knowledge is closely bound up with the institutions and

heuristics ideas that they bring to their tasks. Their knowledge is more valuable because it is often impossible to verbalize and hard to transfer. They work at the boundary between the organization and the outside world, and it is through their actions that the organization and the exigencies of the environment to envision goals and directions. As leaders of the organization, managers are well connected with many outside information sources. Good senior managers are skilled at winnowing the wheat from the chaff of noisy information, to refine models and the unification of organization purpose. Between top management and the operatives are the line and staff managers who occupy intermediate levels of organization. Their knowledge bridges the requirement of the broad, long-term visions of top management and the detailed, tacit knowledge of the front line workers. Their knowledge also falls between strategic planning and operational reality. In this write-up, we shall look at all levels of the organization-Chief executives, marketing managers, finance managers, information managers, and so on. A better understanding of their information use and strategic planning can aid the design of information management processes that quicken their learning and organizational knowledge building.

### **What is information?**

The concept of information is used differently by individuals in different walks of life, from specialists working in the communication and information professions, to those in the computing and cognitive sciences. Most people however define information within the context of their specific disciplines. These definitions, though restrictive in their applications, serves the purposes of the disciplines within which they are related.

In library and information science, a number of definitions exist. One of such definition was that by Shannon and referenced to by Edmund and Morris (2000) in which information is considered exclusively as a property of the message (text, document, record, etc.). Information was further defined by Okwilagiwe (1995) as 'the knowledge accumulated by people in different forms and from various sources, used in making rational decision by individuals, group of individuals, civil, organization, government' etc.:. The definition given by Okwilagiwe affirmed that no decision can be made under the planet earth without adequate information. Bunch and Garry (1990) saw information as a recipient who uses it to make decision ; thus. Information involves the communication and reception of intelligence or knowledge. Furthermore, Martin (1988) says that information constitutes that which adds to our understanding of awareness of some topic, problem or event. The stance of Martin was further enhanced by Popoola (2006) he opined information as facts, news opinions, messages, symbols, signals and processed data that are capable of improving the knowledge state of a user on a random phenomenon.

Martins (1988) stressed further that information is a resources whose generation consumes time and money, whose use conserve time and money, whose cost and value are not known to management direction. Anjorin (2007) relates the definition of information to decision making. She defined information as data that reduce the alternatives available to the manager. An uninformed manager can do anything, and informed manager is likely to have fewer rational options, this definition relies on the role of information in changing managers decision. It is observed from the above definitions of information that information starts with the generation of ideal, which could come in the form of text, messages, symbol, opinion, data, etc, with the sole aim of helping the recipient to make the right judgement, and decision on a phenomenon.

### **What do managers do?**

This seemingly innocent question has proved to be surprisingly difficult to answer well. For long time students of management have sought to piece together the mosaic of variegated activities that make up a managers work day. After a comparison of eight major studies completed over the past thirty years. Hales(1993) observed both common and variations in the content, and execution of management work.. In terms of content, managers engage in specialised technical work as well as general administrative work. managerial work is ill-defined, so much so that part of it is concerned with negotiating its own boundaries. Within these flexible boundaries, common work element includes the following. Managers act as figureheads or leaders who represent out of units. They monitor and disseminate information flowing into and out of work units. They handle disturbances, solve problems and deal with disruptions. They allocate resources in the form of money, materials and personnel. They direct and control the work of subordinates. They form contacts and liaise with others. They innovate by seeking new objectives and new methods of operation. They plan what is to be done and when. In terms of how managers go about their work, it's been revealed the ways managers divide their time. Generally, managers spend most of their time reacting to day-day problems and much less time on planning thinking about strategies. They use face-to-face meeting or telephone calls to deal with operational problems. Most of these activities are short and subject to frequent interruptions, managers communicate swiftly from one problem to the splattering the work day into little packets of concentrated activity (Oyewusi, 2008). She further describes the frenetic character of managerial work as being fragmented, reactive, adhoc, eclectic and highly interactive.

### **Information needs of managers in organizations**

In order to get the clearer picture of the information use of managers in organization there is need for us to know what are the information needs of managers, this is because their needs begat their information use. Oyewusi (2008) stated that information is needed in all spheres of life to facilitate decision-making and engender progress. Adewunmi (2003) quoted Kaniki (1992) who combined the ideas of different scholars to define information as ideas, facts, and imaginative works of mind and data of value potentially useful in decision-making, questions, answers, and problem solving which can reduce uncertainties. He defined need as a state of lack of desirable requisites (information) necessary to deal with a situation as an individual sees fit. He reckons that information needs vary with user, time, purpose, location, and alternatives available. However, the necessity for seeking a better understanding of the information need of either a group or groups of persons is to assist them to design better systems and provide information to meet their needs. Information need varies from manager to manager and these needs will change with time for a particular manager. This is because the information requirements of management depend heavily on the management level involved (O'Brien, 1995). Therefore, the information needs of professionals like bankers in Nigeria are vital. According to Oketunji (2000), such need and requirement vary widely according to the nature of their work. Managers need information for both their professional self-development and organizational success. This in turn provides the manager who is a decision maker with the best possible analysis to take quality decisions. Ajihun (1990) establish that information needs were job related. Akusu (1987) in his own submission stated that information need differ according to areas of specialization of each manager. According to Chiware and Dick (2008) citing the studies by Kinnell, Feather and Matthews (1994) on business information provision for managers in small organizations in China showed that they had limited access to information. The types of information needed by these organizations includes: new product development, markets, standards, investment opportunities, research and development, technology, economic outlook commercial intelligence on foreign markets, barriers to foreign market entry, patents, product specifications, sample products and finance (Chiware and Dick, 2008).

The Information requirements of managers in an organization are to a considerable degree individual and dictated by the specific task in which they are involved. According to Choo (1988) information need are defined by the users requirements as well as situation-determined contingencies, some classes of problems are best handled with the help of certain types of information. It is therefore necessary to identify the information that is needed in order to operate and manage an organization so that the organization can identify what they want their MIS Unit to deliver.

Furthermore, Oyewusi (2008) on the information use of bank managers of financial institutions affirmed that information is also a vital ingredient in financial managerial decisions. Though information is widely recognized as a catalyst for both national and personal development many people especially in the developing countries are still unaware of the need for information and fails to exploit it even when information materials are available free in libraries and information centers. This is because the availability of information does not necessarily mean its accessibility.

Good managers do much more than make good decision, a broad view of decision-making process provides a useful starting point from which to understand what group/organisation must do, however, all the purposes and features of Management Information Systems (MIS) are to satisfy the information needs of the manager for adequate decision-making. In short, IT has been instrumental in enabling banks to increase their access to information, lower the cost gathering it and allow more efficient used to be made to it.

### **Managers as information users**

We may now summarise the main contingencies that characterise the information use milieu of managers. First, most managerial work is action oriented. When managers make a decision, they are in fact making a commitment to action. When managers make sense of a situation, they are in fact interpreting a context for negotiating the possibilities for action. The need to act prevails even when the information available is known to be incomplete or ambiguous. Second, both the internal and external environments of the managers; work unit are complex and dynamic, internally, organizational action is played out in an intricate web of personalities, interests, and long-held beliefs. Each issue may be structurally familiar, but is particularised with layers of emotion and history. Externally, the organising joins an environments in which competitors, customers, suppliers, shareholders, regulators and others all manoeuvre for advantages or control. The trajectories of cause and effect are hidden in a crisscross of relationships and dependencies that are never fully revealed. In short, managers grapple messy problems in fussy settings. Third, the need to take prompt action in a rapid stream of ill-defined situations challenges the cognitive capacity of the individual's managers. The managers try to develop a complete representation of the problem situation she faces, but works with a simplified model that captures the most salient features. She searches for solution using procedures and rules of thumb that have worked for her before. Her search objectives is to find a course of action that will work well enough to solve the problem at hand-she satisfies rather than optimizes (Choo, 1998). The special contingencies of their information use environments modulate the information behaviours and preferences of managers. Managers orientation towards action suggests that they prefer concrete information to abstract information. Concrete information about specific individuals, organizations or relationships, pervades the managers with the details and nuances that she needs to evaluate the relevance and applicability of the information. Because they deal with messy problems where in particular can make a crucial difference, managers look for information in the form of cases and example that are sufficiently fine-grained for them to develop a personal feeling for the situations. Because they face

ambiguous situations where facts and preferences are obscured, managers look for sources and use mode of communication that allow them to probe the hidden dimensions of a situation. For these reasons managers most important information sources is face to face communication. The complexity of the work environment and the need to respond quickly often mean that managers cannot afford a thorough or systematic search of the available information. Information search starts with the recognition that a problem exists, and ends when good enough alternatives have been found.

Search is also heuristic and local: familiar and habitual information sources are used first, and solutions are often sought in the neighbourhood of the problems. Ultimately, managers use information to choreograph effective action. Action is effective when it is robust, that is, when it is able to accomplish short-term objectives while preserving long-term flexibility. Since external circumstances change even as the planned actions unfold, present actions should not restrict a manager's options to adapt to new situations as they evolve.

Our portrayal of managers as information users suggests implications for each set of activities. In terms of needs, managers require information that is sharply focused and finely detailed. They are interested in learning about the informal, unspoken codes that can help decipher a fuzzy problem situation. They prefer to receive their information face-to-face so that they can ask questions and get feedback. Despite these demanding needs, when it comes to information gathering, managers seem to rely heavily on a relatively small number of accessible, familiar, personal sources. Managers exchange information frequently and consult with each other through meetings and telephone calls. More recent research indicates that managers do read or scan printed information sources, and are likely to share interesting news from these sources with others. Managers rarely maintain or use a system to organize and store their information, and instead depend on their own memory or personal lists of data. As a result, managers are sometimes unaware that others in the organization are also working on the same or related problems, or that the same kind of problem has been encountered before. In using information, managers tend to satisfy by choosing alternatives that appear to deliver good enough (but not necessarily the best) results.

For several years now, Nigerians have witnessed the intervention of successive Governments in the efforts to develop the countries' work organisations without desired result. Several factors have been identified as responsible. But recently, researchers, experts, planners and information scientists have identified information as an important input in organizational development. The importance of information as a vehicle for development is increasingly becoming appreciated by planners, decision-makers and even entrepreneurs in the private sector (Dennis, 1996).

Information does not refer to the radio or television bulletins or the daily newspaper headlines which catches people attention as they go to their offices every morning. In the context of development one is referring to the mass of data stacked in government and company files, reports, statistics, projects and whatever information in whatever form that can assist institutions or individuals in their decision making. As Burch and Garry (1990) rightly puts it, "making decisions without relevant information is like trying to shove smoke or see through a dense fog".

The use of information by managers according to Uvenu (2001) is the actual putting into appropriate utilization of acquired information. He noted that information use varies among individuals and organizations depending on their information needs and socio-economic

dictates. Barnay (1991) in his information user studies summarized that information use patterns and formats of information vary among disciplines.

In a study, Choo and Auster (1993) found that many groups of users/managers preferred sources that are local or close at hand which are not necessarily the best sources. The implication of this is that for such users, perceived accessibility of an information source is more important than its perceived quality. Tiarniyu (1993) in his study of factors underlying the use of information sources in government institutions, observed that certain characteristics of information source themselves can be used to explain their use or non-use. These are:

1. Subject content of the information provided by a source relative to the subject content of information required by users in a specific problem situation.
2. Structural-linguistic format in which information is presented; and
3. Extent to which the information sources provide accurate information.

What is Strategic Planning?

i. Strategic planning was defined as top management's plans to attain outcomes consistent with organization's missions and goals.

ii. a continuous process of making present entrepreneurial (risk taking) decisions systematically and with the greatest knowledge of their futurity: organizing systematically the efforts needed to carry out their decisions; and measuring the results of these decisions against the expectations through organized feedback.

iii. opined to mean the process of deciding an objectives of the organization, on changes in these objective, on the resources used to govern the acquisition, use, and disposition of these resources.

iv. may be thought of as a pattern of purposes, policies, programs, actions, decisions, and/or resources allocations that define what an organization is, what it does, and why it does it.

Durodoye (2006) quoting Thompson and Strickland (1998) stated that a firms strategic plan is the "game plan" management has for positioning the firm in its chosen market arena, competing successfully, pleasing customers and achieving good business performances. Codington and Wilson (1994) submitted that a complete strategy, will define the product line, the market and market segments for which products are to be designed, the channel through which the operation is to be financed, the profit objectives, the desired size of the organization and the 'image' which it will project to employees, suppliers and customers. Durotoye saw strategic planning as "the match an organization makes between its internal resources and risks created by its external environment" according to Thompson and Strickland (1988), strategic planning entails five interrelated tasks:

i. Forming a strategic vision of what the firm future business make-up will be and where the organization is headed so as to provide long-term direction and infuse the organization with sense of purposeful action.

- ii. Setting objective, which entails converting the strategic intents with actionable outcomes for the firm.
- iii. Crafting a strategic in order to achieve desired outcomes
- iv. Implementing and executing the choosing alternative paths (strategies) in an efficient and effective manner.
- v. Evaluating of results of the above four actions in order to initiate (if need be) corrective actions in response to intra-and inter-organizational dynamics.

In its simplest terms, strategic planning is a process to develop an organization's strategic plan. And a strategic plan consists of an organization's mission statement and strategic vision, near-term and long-term performance targets, and the strategies that will be employed to achieve the vision's goals and objectives.

For some, and perhaps most, organizations, including libraries, strategic planning is a periodic formal process that can consume a fair amount of time and effort. For many involved in the process, there seems to be little discernible outcome from the investment other than a planning document that is revised, updated, and then placed back on the shelf. This can be amply demonstrated by the fact that business as usual continues apace after the library has completed its strategic plan! (Stueart 2002).

In general terms, strategic planning should be a continuous and systematic process in which the managers of an organization involved in planning make decisions about its future, ensure that procedures and operational policies are designed to achieve the future, and determine how success is to be measured.

### **Strategic Planning**

Strategic planning is the systematic outcome of that thinking process that enables libraries and information centres to organize efforts necessary to carry out these decisions and to measure the results of these decisions against the expectation through organised, systematic feedback and adjustments library and information centres as customer-focused organizations develop services meet their needs and also market to no users who are potential customers. Therefore, Strategic planning must start with the customers. That focus is primary in all types of libraries and information centers today. It is a major tool for effective identification and development of organizational priorities in that milieu. Although it was introduced in the business world more than thirty years ago to address market shifts, it now has much wider, almost universal, application in not-for-profit organizations as well. The concept is relatively new to libraries and information centres; or corporate planning, affecting special libraries. Most large library and information centres and many smaller ones are now involved in some form of strategic planning.

Although strategic planning is automatically associated with growth and new resources management, today it is equally important for successful retrenchment and maintenance of efforts. Strategic planning requires describing a vision for the organization, identifying a mission within that context, setting realistic goals, establishing attainable objectives, and developing activities that can be carried out as policies and procedures that accomplish those goals and objectives. In its simplest definition, it is a process of translating decisions into policies and policies into actions. The approach is being used more and more by both

for-profit and non profit organizations that have recognized the need for change and are determined to make a successful transition, not only from where they are to where they want to be, but also from the current scenario to that of one envisioned for the future.

Systematic, planned change is the most effective way to implement new services and preserve important existing ones, and it eliminates those whose usefulness has passed. This requires an organizational arrangement that makes orderly change possible and attainable within a realistic time frame. Flexibility in development, implementation, and time constraints presents the greatest challenges to a "strategic" planning effort. "Change at the Speed of Thought" is the metaphor of the day, and this requires a flexible process perhaps even "preferred futuring".

To establish a climate for strategic planning within the library or information centre, at least two things are desirable: The entire organization should be informed of the process, be committed to its success, and be kept update as it progresses, and the larger institutional administration should know decisions, commitments, and efforts as a result of planning activities. Within this climate, the library or information centre can proceed with systematic planning process that has a chance of maximum success with a minimum amount of resistance.

Most experts agreed that strategic plans should attempt to project at least five years and that those efforts should be part of an ongoing, periodic planning process. In fact, with today's changing climate, many libraries and information centres are revisiting their strategic planning efforts on a more abbreviated basis. The ongoing process addresses one of the most difficult aspects of strategic planning, which is that of projecting and making assumptions about external forces. A good example is that of monitoring population trends for higher education or urban settings. The further ahead one projects, the greater the uncertainty and therefore the greater the challenge. Uncertainty makes it even more imperative that strategic long-range plans receive periodic review and assessment so that certain aspects can be updated, deleted, or rethought as the library's goals are achieved and as priorities shift. One weakness is that strategic planners seldom, if ever, plan for failure. But strategic planning is attempting to address that eventually with shortened timelines and more effective monitoring (Stueart, 2002).

Edward R. Johnson said to be effective planners librarians and information services managers need a great deal more information about their own organizations and their environment than most have tried or been able to gather. Effective goal-setting and decision making for the future are dependent upon extensive, up-to-date, and accurate information about the current of the organization (Matthew, 2005).

An added benefit of strategic planning is that is also can be thought of as a self-analysis or self-study that identifies the organization's strengths and weaknesses and develops priorities within the framework of the organization's physical and financial capabilities. The library or information centre is an open, social system with specific goals of service. It interacts with the larger environment through the underlying values that it exists to support-sources and services for the social/informational/educational good upon which an open environment depends. To state an overused example, "the right amount of information, to the right person, at the right time, in the right format, at the right cost, and for the right reason" is a plan of service. The self-examination begins with identifying the beliefs, values, and ethos that guide the library's or information centre's service goals. Commitment of individuals, working in the organization, to organizational strategies is more evident through those common values and shared beliefs or ideologies that are deemed

good and desirable and that should act as guidelines that influence actions and the implementation of decisions

Strategic thinking about those factors includes serious discussion of who the organization is and what is its set of core values or philosophy. As an example, the concept of "right to know" encompassed in the Library Bill of Rights might be one aspect of the values system discussion. Focus on the organizational values most commonly agreed upon by members of the workforce helps create a vision and sets the stage for both decision making and daily work. Those shared values and understanding of a vision help build commitment to the organization's reason for being, not just to provide jobs for those working there.

Nancy Bolt said that the existence of a vision gives a context for planning activities, choosing courses of action, and making informed decisions.

## **Conclusion**

From this analysis, emerges a concise understanding of what the organization is, who it serves, and how it intends to achieve its plan by identifying priorities of service and directing decision making.

Strategic planning, components of which can be found in some other planning activities, analyzes capabilities, assesses environmental pressures and opportunities, sets objectives, examines alternate courses of action, and implements a preferred course. However, strategic planning differs from other forms of planning in that it deliberately attempts to concentrate resource in those areas that can make a substantial difference in future performance and capability. Thus, strategic planning is more a frame of reference and a way of thinking than a set of producers. It does not concentrate, as long-range planning often does, upon projecting past experiences into future practices.

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# Availability and Use of Electronic Resources in Agricultural University Libraries

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## Introduction

The educational society can only exist when information is stored, shared, and used properly. Education depends on information resources and these resources are the driving forces for making an educated society. Education and library are two inseparable and indivisible concepts, working for the promotion and evolution of teaching, learning and research in an educated society.

Library is a very important department of every school, college or different educational institution. Library is a repository of resources. It is an integral part of the educational system whose primary function is to serve users (faculty, students, staff and researchers).

Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structure. Advances in computer applications during the past few decades have brought radical changes in the way information is gathered, stored, organized, accessed, retrieved and consumed. According to Narayana & Goudar, (2005) print medium is increasingly giving way to the electronic form of materials. The Internet and the web are constantly influencing the development of new modes of scholarly communication; their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Also, the distribution time between product publication and its delivery has been drastically reduced. The Internet is very important for university libraries for efficient retrieval and meeting of information needs since most of them call for more research work. Ohakire (2006) and Okwuanaso (2006) maintained that the Internet as an instrument for research and communication has opened up numerous possibilities for resource sharing at local and global levels and information on latest journals, books and transactions can be exchanged directly through the Internet. This has caused many libraries to move towards digital e-resources, which preferably is less expensive and more useful for easy access.

Ojedokun and Owolabi (2003) also stated that Internet resource is an invaluable tool for collaborative research among academic staff. Oketunji (2001) opined that the functions of internet has always been to provide a way for academic staff to have better access to each other and as tool to facilitate research, He went on to say that the internet is the world's most efficient means of communication when compared to other sources. Owolabi and Attama (2007) maintained that academic institutions in developing countries especially in Africa cannot afford to ignore the potentials of the internet if their teaching and scholars would make appreciable impact in the global information age. Olalude (2007) reported that the internet is a powerful efficient tool for searching, retrieving and disseminating information among the academic.

## Objectives

- To know the different types of electronic resources available in Nigerian University of Agriculture Libraries
- To study the different types of electronic resources used in the University of Agriculture of Agriculture Libraries
- To know the productivity and quality of information retrieved through e-resources
- Locate the impediments/ challenges faced by users while accessing the electronic resources in the University of Agriculture Libraries

## Literature Review

The pace at which information sources are being produced and converted into electronic form is marvelous. The application of computers in information processing has brought several products and services to the scene. The advent of computer as a product of information technology has made it easy to access and preserve the volume of information. According to Ajala, (2001) libraries all over the world initially started as manual information service systems and for such reasons as bulkiness, growth rate of information and difficulties in coping with the updating of this information gave birth to computers. Related electronic resources and computers have played a major role in education, in this era of proliferation of knowledge. Lang, (2008) stated thus: Electronic resources are the prime ingredients and they become a common part of the suite of most academic library resources today.

A major survey of literature was carried out by Tenopir, (2003). He analyzed the results of over 200 studies of the use of electronic resources in libraries published between 1995 and 2003. Major findings of these studies indicate that electronic resources have been rapidly adopted in academic areas but the behavior of users varies according to their discipline.

Clarke, (2004) states that "Building electronic collections are largely influenced by a set of library policies and users (faculty and students) preferences in the academic environment. He went further to add that these e-resources are added value to the academic libraries to offer better services to users. These e-resources are accessible from many different approaches, thereby creating access to users either by local or remote locations.

Brinkley et al, (1999) quoting from AACR2 Rule 9.0A1 states that "electronic resources consists of data (information representing numbers, text, graphics, images, maps, moving images, music, sounds etc), programs (instructions etc, that process the data for use), or combinations of data and programs.

Due to increase of subscription of e-journals these days, every institution is reducing subscription of printed journals. To know the awareness and usage of e-journals among the students and faculty, a survey was conducted by Verma, Rama and Baljinder in the year 2005-06 in four prestigious institutes of Engineering and Technology of India. Questionnaire method was used to study the usage and awareness. The result demonstrates that an academic library can become user centered in the electronic environment. The information provided on consortia will expand access to electronic databases. It was found that users are accepting electronic information resources. The problems faced by them are lack of training and slow downloading.

The electronic resources empower and enrich the university system. The increase in information generation has made the task of collection, organization and retrieval of

information very difficult although the university libraries often, prefer electronic resources to print collections for maximum use. Many reasons have forced the university libraries to opt for electronic resources in meeting the needs of the large community of users. These reasons includes, escalation in journal's prices, Suber and Arunachalam (2005), pointed out that "the average price of a science journal has risen four times faster than inflation for the past two decades.

- scarcity of space (physical), Lee (1993) suggested an alternative attempt such as remote storage and weeding for solving the space problem in the library.
- digital literacy is the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers, Schrock (1999).
- skilled manpower is the most essential component for the library system. Brinberg highlighted the handicap of new recruit is a challenge for library, Brinberg and Bearan Eds (1987).

In analyzing the advantages of electronic resources, Dadzie (2007), explained that electronic resources are invaluable research tools that complements the print-based resources in a traditional library setting. According to her, the advantages includes: a) Access to more current information.

b) Access to information that might be restricted to the user due to geographical location or finances and

c) Provision of extensive links to additional resources related contents. Still on the advantages, Navjyoyi (2007) also finds out that speedy publication and availability on the desktop are the key advantages that attract research scholars.

Madhusudhan (2008) carried out a study on the use of electronic resources by teachers, students and research scholars of universities and research organizations. Seventy-eight percent (78%) of the respondents feel that the use of the UGC-Infonet e-journals has created high dependency value on their research work and they needed current article alert services and electronic document supply services. Oduwole and Akpati (2003) in the Nigerian context carried out an investigation on the accessibility and retrieval of electronic information at the University of Agriculture Library, Abeokuta Nigeria, and found out that out of a survey population of 1,425 participants responded, giving a response rate of 53.87 percent. The study revealed that electronic information cuts across all members of the university community, and majority of the users were satisfied with their search outputs and to a greater extent easier to use. The major constraints identified included limited number of terminals available for use and incessant power outages. Ali (2005) highlighted the use of electronic information services (EIS) among the users of Indian Institute of Technology (IIT) Library in Delhi, India. Data was collected from three hundred IIT library users and the result reveals that 95percent of users are aware and makes most use of EIS provided by the library.

Rehman and Ramzy (2004) in their research on the awareness and use of electronic information resources among health academics found out that the library is extensively used for research needs, preparation of lectures, and for obtaining current knowledge. 37percent respondents said their main reason for not using electronic resources is lack of time while 22.6percent is unfamiliar with computerized searching.

## **Methodology**

The questionnaire-based survey method was used for data collection. The questionnaire was administered among a sample population of seven hundred (700). Out of the 700 copies of questionnaire sent out, 600 were returned completed. The questionnaire was aimed at eliciting information on the availability and use of electronic resources in Nigerian University of Agriculture libraries.

### Data Analysis

The data for this study were analyzed using frequencies and percentages of 600 out of 700 questionnaires administered on staff and students of the three University of Agriculture Libraries in Nigeria viz: University of Agriculture Library, Abeokuta, Ogun State, Micheal Okpara University of Agriculture, Library Umudike, Abia State, and University of Agriculture, Library Makurdi, Benue State which were filled and returned.

Table 1: Category of users

Category of users	Frequency	Percentage
Lecturers	210	35
Librarians	200	33.3
Undergraduates	100	16.6
Postgraduates	90	15
Total	600	100

The table 1 above shows the category of users used in carrying out the research. Lecturers topped with 210 (35%), followed by the librarians ranking 200 ( 33.3%) indicating that the e-resources is made use of more by the lecturers.

Table 2: Type of E-resources available and made use of

Types of E-resources	Frequency	Percentage
E-Journals	84	14
E-Magazine	19	3.16
E-Exams	35	5.83
E-Thesis	34	5.66
E-Books	45	7.5
www	68	11.3
E-Mail	100	16.6
E-Research	55	9.16
E-Cataloguing	64	10.6
E-Databases	46	7.66
E-Newspapers	50	8.33
Total	600	100

Table 2 above reveals that 100 (16.6%) of the respondents makes maximum use of E-mail both within and outside the library. 84 (14%) consults E-Journal while 64 (10.6%) cataloguers glue to E-Cataloguing.

Table 3: Frequency of usage

	Frequency	Percentage
Use often	70	11.6
Use sometimes	60	10
Never use	-	-
Use always	450	75
Unfamiliar with	20	3.33
Total	600	100

Table 3 above indicates the frequency of use of the E-resources available in the libraries. 450 (75%) responded that they use these resources always supporting the saying of Okebukola (2002) who defined e-library resources as collection in electronic form which can be accessed and used with great ease with the aid computer technologies for the purpose of promoting learning and research.

Table 4a: Different electronic databases available and frequency of use

Databases available	Frequency	Percentage
AGORA	250	41.6
AGRIS	15	2.5
TEEAL	300	50
CAB ABSTRACT	10	1.6
TROPAC	7	1.16
AGRICOLA	18	3.0
Total	600	100

Table 4a enumerated the different electronic databases available in Agricultural libraries of the three universities which 300 (50%) respondents was of the view that TEEAL is the most available followed by AGORA, 250 (41.6%) buttressing the fact that TEEAL version is the most updated on the Internet.

Table 4b: Frequency of use

Variables	Frequency	Percentage
Frequently used	500	83.3
Fairly used	48	8.0
Occasionally used	37	6.16
Unfamiliar with	15	2.5
Total	600	100

Table 4b sought to find out the frequency of use of the databases in table 4a, which 500 (83.3%) topped the variables indicating the frequent usage of TEEAL in the three universities.

Table 5: Reasons for using e-resources

Reasons	Frequency	Percentage
Time saving	300	50
Time consuming	-	-
Easy to use	100	16.6
Less expensive	50	8.33
More useful	150	25
Total	600	100

Table 5 above is the reasons for using e-resources in which 300 (50%) indicated time-saving as the most important reason. 150 (25%) says it is more useful, it has up-to-date information while 100 (16.6%) went for easy to use, pointing to the fact that e-resources are far more advantageous and better than manual resources. E-resources creates new environment where each function is defined and transformed from traditional organizational structure into new institutional entries (Barman, 2009).

Table 6: Response to how satisfied the users are to the existing e-resources available in the libraries

Response	Frequency	Percentage
Yes	450	75
No	150	25
Total	600	100

Table 6 above shows a satisfactory yes of 450 (75%) respondents towards the existing e-resources in the libraries.

Responding to question on impediment/ challenges faced by the respondents while accessing the electronic resources in the libraries, there are a wide range of impediments as indicated by the respondents. These include power outage 300 (50%), sever breakdown 70 (11.6%), lack of adequate computers 110 (18.3%), obsolete information databases 60 (10%), and poor telecommunication network 60 (10%)

## Conclusion and Recommendations

The findings of the study reveals that the technology which Todd (2000) observed for the future, is to create an information environment that is complete, fluid, connective, interactive, diverse and unpredictable. A place where professional provision of information is no longer constrained by time and place which is achievable in the three universities of Agriculture used for the research.

In conclusion, the advantages of e-resources as a means of easily and rapidly accessing of books, journals, magazines, thesis and images of various types are now widely recognized. For the manual traditional tools are limited by storage and space, just as e-resources have the potential to store much more information at low cost. An important advantage of e-resources to academics is the increase accessibility to information sources that are current and relevant to research, learning and studying. For University of Agriculture, Abeokuta, Michael Okpara University of Agriculture, Umudike and University of Agriculture, Makurdi, the e-resources has helped to solve the problem of non-availability of information resources

in printed format on all the programs being run by the University. The e-resources has created access to databases which has helped in actualizing the objectives of the institutions in the areas of transforming, repositioning and re-engineering the University of Agriculture to make information available towards poverty reduction, improvement in the standard of living and wealth creation in the communities.

## **Recommendations**

Based on the following discoveries, the study therefore recommends

1. The management of each of the universities should find a lasting solution to the problem of electricity
2. The computer unit of the universities should work hand-in glove with the university libraries in providing servers with an increased bandwidth to meet up with demands
3. The universities of Agriculture in question should set their priorities right by making adequate provision for computers.
4. Up-to-date information should be provided on the databases to avoid malnutrition. A good nourished information improves decision making, enhances efficiency and provides a competitive edge.

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## **Scientific and Universal Preservation: Defining the Differences**

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### **Introduction**

In the late 1980s and early 1990s, a distinct separation between two alternate forms of library preservation began to emerge: scientific preservation, which is commonly used to treat individual artifacts in special libraries, research libraries, and archives, and is based on the knowledge gained from the 1967 Florence, Italy flood disaster and the early 1980's Library of Congress brittle book crisis; and universal preservation, which focuses on the changing of attitudes and routines of library staff in order to maintain and care for the greatest possible number of library materials on a continual basis.

### **Scientific Preservation**

Carolyn Clark Morrow (2000) describes the beginnings of scientific preservation as a reaction to the brittle book crisis, where "the awakening of libraries to this awesome reality caused them to consider the permanence of all the diverse materials and formats that comprise collections as well as the many variations in chemical and physical structure." These considerations were deemed necessary so that libraries could begin to better understand and prevent material deterioration in order to allow present and future generations access to original materials if and when the materials might ever be needed for research. (Foot, 2006; Gilroy and Godfrey, 1998)

"To create an environment in which a balance is maintained between access today and access in the future" (Watson, 2000) is a common goal for all libraries concerned with the scientific preservation of rare, valuable, or fragile materials. The balance between preservation and access can sometimes be precarious for libraries, because allowing access- or permitting an object to be on display or directly handled- puts the object at a far greater risk of damage or deterioration than if left alone. However, libraries hold their artifacts in the public trust, and therefore allowing access to library materials is paramount to the library's existence. (Feather, 2006) In order to allow for access to materials, libraries use

the knowledge and skills of scientific preservation in two ways: prevention and conservation.

Mirjam Foot (2006) and many others insist, "prevention is always better than the cure." Preventive scientific preservation can come in a variety of different forms, such as establishing a preservation environment and properly storing the artifacts either on display or in an archive.

The contention by John Feather (2006) that "the most crucial thing [for collections artifacts] is to provide a good [preservation] environment" is a position upheld by the majority of other preservation authors. This is due to the omnipresent threat of chemical, environmental, and biological factors that can cause major deterioration in paper-based collections materials if not properly buffered. Gilroy and Godfrey (1998) list "the most significant environmental factors which contribute to the degradation of objects [as]... light, temperature, relative humidity (RH), air contamination, biological pests, and dust." In order to combat the deteriorating effects of these factors, scientific preservation demands the knowledge of what a material's chemical limits are to adverse conditions such as direct sunlight, air with a high moisture content, or pollution, and how they should be shelved, stored or displayed in a way that is safest for the material.

"Long-term retention demands suitable storage conditions and good quality storage equipment, in order to protect the collections and to slow down their physical and chemical deterioration." (Foot, 2006) In lieu of libraries being able to supply their collections areas with the afore-mentioned suitable preservation environment, the second line of scientific preservation's defense against deterioration are proper storage materials. Scientific preservation knowledge in storage can help libraries know what kind of materials their boxes should be made of in order to decrease or prevent acid build-up in artifacts. Storage concerns also cover what types of materials artifacts should be shelved on, and the use of moisture-reducing agents like gels or specific woods.

When learning about scientific preservation efforts in libraries, it is important to know that "all collections are not equal. Collections and items vary with regard to intrinsic value, research value, and replacement potential." (Hamberg, 2003) This belief stems from a variety of reasons, first and foremost being that the necessary funding needed to preserve every object in a library's collection is simply not a reality. So when artifacts begin to deteriorate to the point that libraries have no other choice but to administer conservation treatments or risk losing the artifact for good, they must take "into account the needs and benefits of the collections," (Foot, 2006) and administer conservation treatments only to the artifacts that are considered by the institution to be of high priority. The conservation efforts employed by scientific preservation fall into three distinct areas: surrogate creation, restoration, and crisis management.

It is not uncommon for libraries to house artifacts of extreme importance, wealth, or fragility. These types of objects require libraries to place above average limitations on their access or display time. In this type of situation, libraries will often create surrogates (or copies) of the artifact that will allow for researchers to access the artifact's information while keeping the original artifact stored safely in a secure preservation environment. This helps fill the library's need to safeguard the original artifact while allowing for the public to access the information that the artifact holds. However, there is an alternate side to surrogate creation that Helen Forde (2007) points out will "involve a host of choices, all of which require judgment about condition and access, and some of which may be controversial." Often times, the creation of surrogates, such as photocopies or microfilm, will cause

damage or even destroy the original artifact, thus terminating the library's goal for future generations being able to access and study the artifact in its original form. As Foot (2006) illuminates, "frequently the format is as important as, and sometimes even more important than, the information it contains." The moral implications faced by libraries that enter into procedures that destroy original artifacts are great, and should be fully considered before they are enacted.

Similar moral grounds apply to libraries when considering the conservation treatment of restoration. Restoration, as defined by David Gilroy and Ian Godfrey, (1998), "involves conservation treatment plus the repair or replacement of missing or damaged sections." Ideally, restoration efforts should only be taken in order to reinforce an artifact in severe dilapidation, and reconstructed in a manner that reestablishes the artifact's cultural or historical relevance. To achieve this, "it is essential to know exactly how the original object was created." (Gilroy and Godfrey, 1998) Unfortunately, there is always a chance that today's knowledge of an artifact's creation or what it looked like when it was whole is somehow lacking or incomplete. In situations like this, the restoration of an artifact will depend greatly upon the interpretation of the person or team of people administering the restoration treatments. Moral concerns arise from this, because there is always a possibility that people will bring their individual viewpoints or biases into their work in order to fit an idea or theory. If this is the case, the intrinsic nature of the original artifact will be forever changed, thus raising the possibility that the artifact would be useless for future research.

As a precaution for the welfare of a collection, Jan Merrill-Oldham (2003) states, "emergency preparedness and response supports and legitimizes all other preservation activities." In the unfortunate event that a library is impacted by a disaster such as flooding or fire, "a written disaster manual, emergency training, and practice runs can do much to make a disaster less traumatic and to make those who have to deal with it more confident." (Foot, 2006) Above all other concerns, scientific preservation stresses the need for personal safety above the safety of collections. Once all staff and personnel are accounted for, and the area is deemed safe to re-enter, those library staff adequately trained in emergency procedures should immediately begin assessing the amount and type of damage inflicted on the collections materials. A properly prepared library will have "well-stocked emergency supply closets that include such tools as water vacuums, dehumidifiers, fans, extension cords" (Merrill-Oldham, 2003) and flashlights for the emergency crew. These emergency supply closets should be convenient to access in order for the specially trained staff members to begin their conservation efforts as quickly and easily as possible.

Since it's extremely possible that the extent of damage done to a library's collections materials may prove overwhelming for trained staff to administer immediate conservation efforts to all affected materials, libraries should attempt to secure off-site locations, preferably with running freezer units. These off-site locations allow for emergency crews to re-locate collections materials in order to assess damages in a clean area away from wet floors or lingering toxic fumes. Off-site freezer units also allow for damaged materials to be frozen in order to avoid additional damage or deterioration to occur as each item waits for conservation treatment. This then allows for scientific preservation efforts to be focused on small amounts of artifacts one at a time. Merrill-Oldham (2003) suggests "that there are multiple options available for securing freezer space for wet library materials" in the event that one or more off-site locations prove inaccessible at the time of the emergency.

In order for libraries to learn and adapt to any future disasters, Foot (2006) suggests that "there is a need to assess what has happened, why, and how it has been dealt with."

Libraries should then adapt, strengthen, or change procedures so that libraries will be even better prepared in the event of similar disasters in the future.

The final necessity for scientific preservation is the library's ability to constantly evaluate all of their preservation efforts. By "monitor(ing) [collections] and form(ing) benchmarks against which performance can be judged," (Foot, 2006) libraries can be able to evaluate the efficiency and results of their preservation actions. Besides being able to note the significance that scientific preservation efforts have on individual artifacts, the overall goal of a library's ability to allow present and future access to its collections materials is the standard that will tell if a library's scientific preservation efforts have been successful.

## **Universal Preservation**

In 1996, John Feather made the statement that the "preservation of materials has been too easily dismissed as the esoteric concern of the archivist or the rare book librarian, of little or no interest even in the mainstream of academic or public librarianship, let alone the fashionable electronic world of information science." After a review of the specific knowledge and skills needed for the better-known scientific preservation, the reasons for this belief can be plainly seen. However, as Sara R. Williams (2000) surmises, "the rising cost of purchasing and maintaining collections of any medium makes it essential that every library have some kind of collection maintenance if its collections are to remain accessible to users." In order to make this a reality, universal preservation focuses its attention on three major staff issues: attitude, training, and routine.

### **Attitude**

Just as with scientific preservation, universal preservation promotes the creation of a preservation atmosphere. However, the preservation atmosphere that universal preservation refers to is social rather than environmental. Thus, the first step for libraries to take in implementing universal preservation into their systems is to "raise enough awareness of the nature and scope of preservation so that [staff], volunteers, and staff administration are convinced of its importance and committed to its support." (Rolich and Mohlhenrich, 1997) In order to create the necessary attitudes within the staff conscious, libraries can take a number of approaches, most notably communication, administrative support, and policy creation.

"The idea that everyone, no matter what his or her job title, handles library materials and is responsible for their safety" (Ryckman, 1997) and "the creation of a common [preservation] language" (Lopez, 2003) are important to universal preservation in order to open necessary lines of communication between all levels of library staff. The creation of positive communication issues like these help promote a one-for-all atmosphere, where everyone feels comfortable with the information and terminology being discussed, allowing for all staff levels to be on par with one another. The intended payoff is that all library staff will feel more comfortable in approaching management and administration with concerns and solutions pertinent to the running of a successful universal preservation program. (Rolich and Mohlhenrich, 1997)

Ross Harvey (1993) states that when implementing universal preservation practices into a library system, of vital importance "are the attitudes of the library's senior management, who need to have a commitment to preservation as an integral part of the library's mission." Therefore, it is not enough for a library's administration to solicit the views of staff members, but to also noticeably act upon them. If a library's staff understands that the

administration sees their universal preservation efforts as an integral part of the library's daily operations, then staff will be more willing to accept and incorporate the knowledge and skills of universal preservation. (Reed-Scott, 2000)

The final step in securing positive attitudes in staff members towards universal preservation is the creation of a written universal preservation policy. As Feather (1996) emphasizes, "preservation cannot be expected to clearly happen. A preservation policy is needed which will determine priorities and methods." The key element of the preservation policy is that it is a physical manifestation of not only the administration's wishes, but is also a part of the future vision of the library itself. Therefore, a preservation policy should be expected to "create an atmosphere that will support institutional change." (Morrow, 2000) There is a consensus amongst both scientific and universal preservation authors that in order to relate to the ever-changing needs of collections, as well as library staff, a preservation policy must have the ability to be amended and shaped to better represent current workplace dynamics. (Feather, 1996; Foot, 2006) As with administrative support, library staff will feel encouraged and appreciated for their involvement with preservation activities when they are able to see that staff opinions help shape the library's policies.

## **Training**

As Ross Harvey (1993) states, "careful handling does not come naturally and must be taught." It might be expected that a statement like this is directed towards library patrons, whom often seem to handle library materials with an at best cavalier attitude. However, Sharon Bennett (1997) highlights the startling fact that "much of the damage that library materials sustain is the result of actions by staff as [books] move through the library operations." Thus, before libraries should even consider creating preservation awareness programs for their patrons, they must first indoctrinate their staff in proper preservation procedures. Fortunately for the funding-strapped libraries of today, "education can provide the highest returns for the lowest cost of any preservation activity." (Ryckman, 1997) Three important ways that libraries can begin to educate their staff to universal preservation needs are through orientation training, preservation education programs, and special conservation programs.

With new staff, Nancy Carlson Schrock and Anne L. Reynolds (1997) implore libraries to "educate, educate, educate. Train the library staff. Instructions in care and handling should be part of basic orientation for all new staff workers." The reasoning behind this, as Anthony J. Amodeo (1997) contends, is that "bad habits are harder to correct than good habits are to teach." Schrock, Reynolds, Amodeo and others believe that orientation training helps libraries in two distinct ways. First, since "the principles that underlie guidelines for proper care and handling are not widely known," (Darling and Webster, 1993), orientation training allows for libraries to teach new staff proper preservation procedures right at the beginning of their employment. The intention being that orientation programs will teach new employees proper preservation procedures before bad habits are even allowed to form. Second, as Duane A. Watson (2000) states, orientation training "clearly establishes and articulates institutional policy and preservation education and training for all staff." The intended result with orientation training is to impress upon new staff the importance of their responsibilities towards the preservation of the library's collections materials.

When creating preservation education programs, Morrow (2000) reminds libraries that "there is no magic formula for a library preservation program; it is the result of a continuous process of definition, planning, and priority-setting." Although there may not be a secret formula, Morrow's use of the word *continuous* is important for two reasons. First, it serves

to remind library administration officials "the work of educating [staff] is never complete." (Darling and Webster, 1993) Second, continual training instills the fact that "the preservation problem is long-term" (Darling and Webster, 1993) into the staff psyche. Preservation programs should focus on the daily routines of library staff, while "keeping the topic relevant and light so that you don't lose your audiences interest or become mired in the dos and don'ts of preservation." (Greene, 1997) Harlan Greene (1997) further suggests, "the more parallels one can make with the real world, and with common sense approaches, the more likely listeners are to agree with what [preservation programs] are saying." Libraries can expect continual preservation programs to act as a reminder of the preservation requirements of collections materials and how daily staff actions have "a significant impact on the condition of the collections" (Darling and Webster, 1993) by "[ensuring] that the right knowledge and skills are available to carry out the necessary work." (Foot, 2006)

With preservation education, Rolich and Mohlhenrich (1997) stipulate that "most [staff] are eager for information once they possess a minimal level of preservation information." In order to satisfy this desire for staff members who want to expand their knowledge of preservation, libraries should provide staff with avenues to begin learning basic procedures in the conservation of already damaged materials. "Most people have no understanding," writes Nancy Gwinn (2003), "how books are constructed or how you can preserve them by taking them apart, washing and cleaning the paper, filing in holes, sewing them back together, and creating a new binding." A probable reason for only a small amount of people having the proper knowledge that Gwinn talks about is that simple conservation activities like these are extremely time consuming, and take away the focus of properly trained staff from more pressing conservation issues. Although Sara Williams (2000) relates that "nondestructive repair requires a certain investment in staff training and exercise," she also contends that "the results last longer than those done with unsound techniques and materials," and especially doing nothing at all. Making more advanced skills available for interested staff to learn helps the library in two distinct ways: it signals to library staff that the basic, common sense approaches of universal preservation are not the end of their preservation education, and it also attempts to create a larger work pool of properly trained staff. It's hoped that through the creation of a larger pool of properly trained staff, libraries can actually begin to carry out those more time consuming, yet extremely beneficial conservation efforts promoted by Gwinn.

## **Routine**

According to Rolich and Mohlhenrich (1997) and many others, "the objective of preservation training is to encourage [staff] to take the knowledge and skills gained, put them into practice or adapt them for use in their own work environment." If libraries have fostered a positive preservation attitude and taught the necessary amount of skills, library staff should be able to "take into their daily work a new preservation awareness as well as specific preservation knowledge and skills." (Reed-Scott, 2000) Universal preservation knowledge and skills can be easily incorporated into daily staff routines, because "a great deal of it involves common sense and goodwill." (Rolich and Mohlhenrich, 1997) Another key reason is that the routine activities of universal preservation are preventative in nature, unlike the often-reactive nature of scientific preservation, and therefore can be accomplished in easy-to-handle increments. As Harlan Greene (1997) so simply states, "if we do little things to keep books in shape from day to day, we can minimize our use of expensive conservators, book *surgeons*, and time away from the shelves in a library bindery." The most important of these common sense preventative procedures of universal preservation are handling, housekeeping, and damage management.

Jan Merrill-Oldham (2003) and nearly every other preservation author insist on the importance of fostering "an environment in which all materials are handled consistently, according to an established protocol, from the time they enter the acquisitions workflow." Indeed, proper materials handling should be the central focus of a library attempting to implement universal preservation into their institution, and can be separated into two main topics: shelving and transportation. In order to address these handling topics, the library's most common material- the book- will be the focus of proper handling procedures.

Writing on shelving concerns in 1993, Ross Harvey (1993) is still in the vast majority when he stated, "proper shelving and storage are important factors in extending the life of all books." It is important for staff to understand that "damage to books is cumulative," (Harvey, 1993) and that continual poor shelving procedures can rapidly deteriorate a book in a relatively short time. This is not only a drain on much needed funding in order to fix or replace the book, it just as importantly impedes patron access to the information object when the object has to be removed from the shelf for repair. There are four main topics for shelving in universal preservation: book removal, shelf room, book posture, and book replacement. Each shelving topic tends to have a familiar damage area associated with it, (Frame, 1997) which can allow for a library to pinpoint where the shelving preservation skills of staff need to be taught or corrected.

In conjunction with proper shelving techniques, Duane A. Watson (2000) makes the case that "training in safely transporting materials by hand, book truck, book lift, or elevator is equally important for all staff." Whether either through staff eagerness to retrieve collections materials for patrons as quickly as possible, or simply to finish a job with all due haste, a significant amount of damage occurs to books during transportation from one area of the library to another. The most common of damages comes from staff improperly loading and securing books onto a book truck during transportation, which raises the risk of books falling off when avoiding obstacles or pushing the truck over obstructions. In order to prevent damage from happening, Watson (2000) strongly suggests that "staff should be well trained in handling materials, loading them on trucks and transporting devices, and maneuvering these vehicles down aisles, and into and out of elevators."

Although housekeeping in libraries typically falls to outside maintenance vendors, Watson (2000) insists that this should give libraries even more of an incentive to make sure that they "work with maintenance staff on regular cleaning schedules and procedures that are safe for the collection." Effectively, this means that maintenance staff must be included and welcomed into a library's preservation team. Dust and dirt accumulate quickly on all collections materials, especially on materials that are not commonly handled. In this regard, Feather (2006) draws attention to the basic preservation thought that "one day such low-use materials may well prove vital for research, the advancement of knowledge, and it is the library's duty to ensure that it is still available to be handled and to be used." Therefore, libraries must make clear to maintenance staff the importance of their housekeeping responsibilities by clarifying any and all "issues that must be carefully addressed to assure the safety of the materials being cleaned." (Watson, 2000)

However, housekeeping issues with universal preservation do not begin and end with the cleaning duties of a library's maintenance staff. All libraries should have a strict housekeeping policy on perishable items that are brought into the building. As Watson (2000) bluntly lays out, "food and drink have no place in areas where collections are housed and used, including offices and workspaces." Food and drink pose a serious threat to library collections in a number of ways. Specifically, they can leave stains, make pages stick together, and most importantly attract insects and other damage-causing biological factors.

Libraries must make sure that their staff are not only diligent with not allowing patrons to enter with food or drink, but are equally diligent with their own snacking habits.

Just as with handling, when discussing damage management in universal preservation, the main focus is on the physical interaction that staff have with collections materials. In order to lessen the damage created by what Julie A. Page and George J. Soete (1997) refer to as a collection's "human enemies," libraries should focus on three key areas when trying to limit the amount of damage sustained by collections materials in their day to day use. These three areas are recognition of damage, prevention of vandalism, and the supervision over potentially damaging library activities.

Recognition of damage is an invaluable tool for staff members to have, because "the sooner materials are identified for treatment, the more easily and quickly they can be repaired." (Merrill-Oldham and Schrock, 2000) Damage recognition does not need to be an activity in and of itself, but rather can be implemented into nearly any daily library routine that involves handling collections materials. Jan Merrill-Oldham and Nancy Carlson Schrock (2000) further explain "early intervention is cost-effective because preventative treatments are easier to perform than complicated repairs, and they require less time, fewer materials, and less skill." Libraries should not, however, allow untrained staff to administer quick fixes, because, explains Merrill-Oldham and Schrock (2000), "the need to repair [collections materials] quickly can result in treatments that are expedient rather than durable and non-destructive," and "inexpert repairing of books accelerates their depletion." Unless otherwise sufficiently trained to administer basic conservation treatments, library staff should have a well-known, centralized area to which to immediately take damaged materials after they are found.

In reference to vandalism that frequently occurs in libraries, such as cutting, ripping, and underlining text, Duane Watson (2000) insists, "security is everyone's responsibility and should be reflected in a security policy." As with housekeeping, this means that the library needs to clarify their standards and expectations to security staff managed from an outside vendor; effectively welcoming them too into the library's preservation team. But just as with housekeeping, "vigilance of all staff is necessary to reduce vandalism" (Watson, 2000), meaning that library staff must also play their part in order to protect library materials from vandalism as well.

In order to better cater to their surrounding communities, libraries offer a wide variety of services other than materials lending, such as photocopying and digital scanning. However, many of these services are typically carried out in a manner that "imposes considerable stress on the material." (Harvey, 1993) Heeding Harvey's further warning that "failure to respect the physical nature of library materials" is a precursor for causing severe damage to an object, libraries should attempt to avoid putting unnecessary stress and subsequent damage upon collections materials. They can attempt to achieve this with clear, legible signage around such services as photocopying machines instructing patrons on proper use. For even better control over patron actions, libraries should place photocopiers, scanners, and the like close enough to staffed areas so that librarians can oversee their usage.

As with scientific preservation, the final necessity for universal preservation is to evaluate the preservation of collections materials as well as the actions of library staff. As Merrily Smith (1997) states, "evaluations are based on assessments of data that have been gathered from numerous sources," and when evaluating universal preservation, must focus on the development of staff in "three elements- reaction, learning, and change in behavior." If it can be shown that libraries have successfully changed the attitudes and daily routines

of staff through exposing them to the proper knowledge and skills of universal preservation, then libraries should expect to reap the rewards by having an accessible, attractive, and cost-effective collection for library users.

## **Concatenate**

Before universal preservation programs begin to be created by public libraries, it is recommended that the staff and administrative officials involved familiarize themselves with some of the fundamental preservation concerns approached by scientific preservation. Most important is an understanding of the agents of deterioration that threaten the longevity and wellbeing of collections materials held by public libraries.

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## **Enhancing Access to Information for Rural Farmers in Nigeria: A Means of Achieving Vision 2020**

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### **Introduction**

With the potential in Nigeria in terms of rich soil and mineral resources, one would expect that the country's economy should have been better than what we have. In an attempt to improve on the present economy, the logo vision 20-2020 emerged. According to Wikipedia free Encyclopedia (2010), the logo 20 2020 means that by the year 2020, it is expected that

Nigeria will be one of the 20 largest economies in the world and it is also expected that Nigeria will consolidate its leadership role in Africa.

Various Nigerian presidents had tried to improve Nigerian economy through different means but with little impact. Then former President Yar'adua came up with a strategy that could guide this decision and actions to make it happen. For the new idea to work for the country, he initiated 7-point Agenda. Onyekakeyah (2008) stated that clearly that 7-point Agenda has been subsumed under vision 20 2020. He went further to say that however the vision is, a long term project but the 7-point Agenda is to address basic immediate developmental needs affecting the nation. The major issues in 7-point agenda was; power and energy, food security and agriculture, wealth creation and employment, mass transportation, land reform, security and qualitative and functional education (Aluko, 2007).

One of the points of the 7-point Agenda is food security and Agriculture. This point is very important, Nwanze (2010) emphasized that Agriculture and nutrition which is part of food security are vitally important issues and need to be a key part in our effort to fight poverty, development and wealth creation. He went further to say that it is estimated that half of the worlds poor are small scale agriculturalists, which are rural farmers. Odeh reported in Sunday Independent of October 24, 2010 that over two billion rural women and men in Africa, Asia and Latin America depend on rural farming and such small farmers can feed the world if directed. For instance, International Rice Research Institute (IRRI) said that 80% of imported rice production is grown by small holder farmers in developing countries. The rural farmers cannot achieve this without the commitment of many partners from NGOs, private sector individuals and government emphasized (Nwanze, 2010). It must be noted that librarians as information providers, who are in charge of public libraries and information centres have a great role to play in providing necessary information to the rural farmers. Librarians can provide this information in different format like talks, posters, videos, pamphlets, news etc.

Information needed by the rural farmers could be according to their needs. Their needs could be how to control pest and diseases, environmental hazards, seedlings, preservation, finance and non access to loan. There is a saying that information is power. If enough information needed by rural farmers are repackaged in the language they will understand and given to them at the appropriate time, Nigeria will be able to achieve food security. The drive to achieve the food security and national development objectives as espoused in the 7-point agenda makes the strengthening of Agricultural production, storage and marketing as well as research and development imperative. Amobi (2010) noted that national food security programme according to the Federal Ministry of Agriculture and Water Resources is to ensure sustainable access, availability and affordability of equality food to all Nigerians for the country to become a significant provider of food to the global community.

### **Objective of the Study**

1. To investigate how the rural farmers gain information on how and where to obtain farm credit, loan, seedling, fertilizer, pesticides, modern farm tools and livestock.
2. To find out whether the farmers belong to any cooperative society.
3. To find out from which organizations the farmers gain assistance from.
4. To find out problems that inhibit adequate production from the rural farmers.
5. To articulate the role of the library in providing information to rural farmers

### **Food Security and Agriculture**

In other to achieve vision 20-2020, Nigeria made food security and agriculture as one of the seven point agenda. Wanmali and Islam (2002) said that the concept of food security has been seminal in developing policies to end hunger and malnutrition during the last 25 years. Food security can be defined as a goal to be achieved when there is an adequate food supply to which all members of the population have full access (Christensen 1991). During the world food conference 1974, food security was discussed with emphasis on maintaining a network of sufficient food to meet the food needs of each country. Many developing countries thought that food sufficiency will depend on food importation. However, World Bank (as cited in Wanmali and Islam 2002) emphasized that food security is understood as having physical and economic access to sufficient food for healthy life by all the people.

Agriculture is once again seen as the engine of economic growth. Wanmali and Islam (2002) opted that investment in agricultural sector will lead to increase in food production and household incomes and also strengthens linkages between agricultural and non-agricultural sectors, as well as rural economy. All these are seen as an integral component of any future strategy for achieving food security.

In Nigeria the government has tried to improve on some policies, Aremu (2009) reported that the following could strengthen agricultural business through profitable price support mechanism:

- Technological empowerment of agricultural sector
- Increase in access to credit finance
- Improvement in rural access infrastructure
- Improvement on available silos and provide additional ones in the country to cater for food production
- Translations or repackaging of research results in agriculture.

Agriculture is therefore fundamentally multi-functional FAO (as cited in Wanmali and Islam 2002). More sustainable agricultural system therefore tends to a positive effect on natural, social and human capital and also produces food, fibre, oil etc.

### **Problems of Agricultural Production**

Almost all the president in Nigeria acknowledges the importance of agriculture and therefore proposes one policy to help boost agricultural product, yet most of them yield no effect. Amobi (2010) enumerated the challenges for sustainable agricultural production as follows:

- Unfavourable economic policies
- Improper implementation of most agricultural policies
- Low rate of technology adoption
- Land tenurship
- Inadequacy in the supply and use of farm input
- Environmental hazards
- Poor processing and preservation technology
- Disease and pest infestation
- Non accessibility of Agricultural loans by farmers

Nwanze (2010) emphasized that among the problems of poverty and hunger is slow recovery from the financial crisis and global economic downturn, the future of food security is at best unpredictable. Another major problem now is presented by United Nation (UN) repertoire on right, Oliver De Shutter cited in Odeh, (2010), who said that the world food

Day was marked with the theme 'United Against Hunger'. He emphasized that as a result of climate change, the yield in certain regions of sub-Saharan Africa are expected to fall by 50% by 2020 in comparison to 2000 levels. Sudhir and Yassir (2000) enumerated sources of food insecurity as drought, crop production risks, disruptions in imports/exports, falling prices of agricultural exports, poor infrastructure, political crisis and government failure.

- Drought will make small holders with limited resources and non-diversified income to suffer because they have invested all their money in the farming.
- Poor infrastructure like roads and means of transportation will lead to wasted agricultural products, due to the fact that the farmers may not be able to send their crops to cities where they can sell them.
- Political crisis will lead to civil unrest, this affect every aspect of agriculture, which leads to low production.
- Sustainable management of natural resources land to farm. Sadhir and Yassir (2002) stated that an estimated one billion people already live in households with insufficient land to meet their minimum food needs and about 500 million people living in abject poverty are ready located in areas of high ecological vulnerability.
- Inadequacies in supply and use of farm inputs – the adequate supply of critical input like fertilizer, seeds and seedlings, agro-based chemicals etc at the appropriate time and right prices had remained a major setback for effective agricultural production growth.
- Low rate of technological adoption and labour constraints. The continuous drift of rural labour to the urban areas in search of paid employment had left the agricultural production in the hands of old people. This has greatly affected the agricultural production as farmers reduce their farm size to manageable level and the introduction of mechanized farming at the rural level should have accounted for, but for the high cost of the machines like tractors, harrows, harvesters, planters even at the option of hiring instead of outright purchase.
- Infrastructure and services. The provision of infrastructure: road, electricity, water, schools etc. has often been more effective in alleviating poverty while at the same time stimulating economic growth.
- Disease and pest control. Diseases and pest infestation account for reduction in agricultural production growth. High cost of agro-chemicals non provision is also affecting production.
- Environmental Hazards. Bush burning, over grazing, deforestation, erosion, desertification and soil degradation.
- Finance and credit facilities. Agriculture product does not attract financial loans from financial institutions like other sectors because of it peculiarities inherent in agricultural sector.

### **Strategies for Improvement of Food Production**

Ways in which rural farmers can improve their production and earn enough income is through forming farm cooperatives among themselves.

Attwood and Bavista (2002) emphasized that some developmental goals in agriculture are best achieved by cooperatives and similar organizations, rather than private corporations or state bureaucrats. These cooperatives help people cope with economic, social and environmental problems. To be effective, they must adapt to local conditions, meet the needs of small producers and operate under their control. On the other hand Pretty (2002) opted that improvement in Agriculture have to involve among others, social capital, Human capital, physical capital and finance. For instance improvement on building farmers'

knowledge and skills will lead to a more sustainable systems farming. Mullen (2002) also enumerated information flows, public awareness of citizen's rights, reinforcing capabilities train, erosion control and access to financial markets. One way to train the farmers is by using pictures to show them practical way of doing things. The African Rice Centre (Africarice) has developed a simple solution to help farmers share the knowledge of improving the process of rice production as contained in Sunday Independent, October 2010. Farmer to farmer videos developed series of video to instruct farmers on seed sorting manually by floatation, seed drying and preservation in Bangladesh. Farmers in Guinea watched videos of Bangladeshi women creating solutions to improve the quality of farm-saved rice-seed.

A survey of 160 women in central Benin comparing the use of video with conventional training workshop showed that videos reached 74% of women compared with 27% in conventional training. This means that information flowed more with video training and created public awareness of citizen rights, reinforcing capabilities training, and capacity resource. Also availability and access to financial market, control and use of agricultural chemical will help the rural farmer to produce more food.

## **Methodology**

The data was collected through interview and focus group discussion since some of them were not literate. Two state were used from south-East Nigeria which are Abia and Enugu states. Specifically Umuahia and Nsukka were two towns studied in these states respectively. These towns were chosen because they are farm areas. The extension workers and cooperative officers in the local government helped us to reach and communicate with the farmers. Focus group discussion was used to elicit information from them especially on their challenges and how the access information to meet their problems. 23 farmers formed the focus group from Umuahia while the representatives of 15 cooperatives formed that of Nsukka.

## **Findings**

### Sources of information

The focus group from Umuahia was made up of 23 people while in Nsukka it was representative of 15 cooperative societies. The rural farmers from Umuahia said they gain information concerning farming from agric extension workers, radio and IITA (International Institute of Tropical Agriculture) because they have extension office in Umuahia. Then farmers in Nsukka have access to information through cooperative education, seminars, agric extension officers and radio. Lack of adequate information will lead to non accessibility of loans as emphasized by Amobi (2010). Information is crucial to everybody, it is the access to required information that will enable the rural farmers to tackle some of their challenges.

### Extent of belonging to Cooperative society

In Umuahia there are 8 cooperative societies and in Nsukka, there are 15 viable cooperative societies. Their gains from the cooperatives are as follows:

- They agreed that cooperative society help them to gain access to information and also access to farming equipment like tractors and negotiation for farm land.

- One group said they make monthly thrift for savings and one can borrow from it and at the end they share the money and the interest. Loans from there help them in their farming.
- It is through cooperatives that some NGOs/Government assist them through evening programme for illiterate ones, seminars and workshops to improve in their farming methods and how to gain loan access and rent machines for planting at subsidized rates. These benefits are in line with Attwood and Bavista (2002), who emphasized that some developmental goals in agriculture are best achieved by cooperatives and similar organization. These cooperatives help people cope with economic, social and environmental problems.

#### Organizations that assist the farmers

Farmers from Umuahia said they get assistance from IITA (International Institute of Tropical Agriculture), FADAMA project and Umudike Root Crop Research Institute

Farmers from Nsukka agreed that they gain assistance from agent of Ministry of Human Development and Poverty Reduction and Eradication of Poverty, Cooperative Department, Agric Extension Officers, FADAMA and Food Security Programme (World Bank Project). These groups assist the farmers in gaining soft loans, providing sources to information, organizing education programme, talks and seminars for them and at times provide seedlings for them. This agrees with Nwanze, (2010) who was of the opinion that rural farmers cannot achieve this without the commitment of many partners from NGOs, private sectors, individuals and government.

#### **Challenges**

Both groups agreed that the major problems are as follows.

Lack of personnel to operate their processing machines

Delay in delivering fertilizers and other farming seedlings by government.

Inadequate fund to pay for labour and seedlings

Difficulty in transportation due to bad roads.

Lack of storage and processing facilities.

Inability of the government to fulfill most of their promises

The above challenges agreed with Amobi (2010) and Sudhir and Yassir (2000) enumerated the challenges for sustainable agricultural production as poor infrastructure, political crisis and government failure, land tenureship, inadequacy in the supply and use of farm input, environmental hazards, poor processing and preservation technology, disease and pest infestation and non accessibility of Agricultural loans by farmers. Most of these problems could be overcome or minimized by the farmers have adequate and relevant information.

## **Role of the Library**

Public libraries in each state in Nigeria should serve all categories of people both educated and illiterate farmers. To be able to serve them the librarians and library staff need to identify their information needs. If information is supplied according to their needs then information will be put into use. The rural farmer needs or problems as stipulated above could be finance, method of farming system equipment like fertilizers etc. For instance in case of finance and credit facilities, Amobi (2010) stated that in 2010 the federal government floated N200 billion for agricultural fund intended as part of measures to resuscitating agricultural production, but farmers could only access about 70 billion. He attributed this to insufficient information and guidelines to the core farmers who need the loan. So libraries can provide the information by providing how and where to get the loans by the farmers. This they can do by repackaging the information in their local languages in which the local farmers can understand easily. The information could be repackaged according to Udensi (2010) in form of drama, use of songs, storytelling, photographs, paintings, drawings, diagrams, films, charts, posters.

The greatest challenge facing agricultural sector is the delivery of useful information to rural communities. Van Niekerk (1993:19) sees one of the ways of improving production in agriculture as the reduction of the gap between theory and practice. This can only be reduced by correct methods of communication which can be both direct and indirect. Direct communication is in a situation where feed back can be provided instantly precludes any feed back of information and media such as book circulars etc. Agriculture is an essential part of our economy, various initiatives have been undertaken to fulfill the information needs of rural farmers. Methods / ways to provide information to rural farmers include popular press, demonstrations and exhibition.

Another way of disseminating information for practical purposes is through showing video tapes to the farmers. Example , African Rice Centre (AfricaRice) has developed videos to instruct farmers on seed sorting, seed drying and preservation in Bangladesh, rice quality and parboiling in Benin, land preparation for planting rice in Burkinafaso, weeding and soil fertility management in Mali.

The media is another means of disseminating information like radio. For instance there is this women farmers Advancement net work (WOFAN), which opened a new vista in the management of information by rural farmers in a radio program where they sought to teach them about farming; it gives them a powerful voice in their line of business, this programme enlightens the rural farmers, even the illiterate ones that cannot read nor access vital information on farming, to listen to the programme because it is done in their local language. These rural women farmers were first encouraged and helped to form listeners groups, the group were encouraged to discuss problems and suggest solutions, they were helped with information where they had none. The radio programme conquered some of the most difficult issues in rural development such as illiteracy and cultural inhibitions. The radios are battery operated and very cost effective, as such most farmers can have access to radio.

The librarians will need the help of others to get everywhere in the state, local government or towns and villages. The libraries should involve a lot of people in disseminating the necessary information. According to Echezona and Okafor (2008), they can involve chiefs, town crier, hand bills, extension services by involving mobile libraries. The libraries can also use town unions, age grade organizations, cooperatives, market unions. If the rural farmers get the required information to solve the major obstacle in rural farming, then it will have a

better yield for the rural farmers, this is a step in matching towards food for all and of the much talked about having food security. It will also lead to improvement in economy and if this happen for 10 years by 20-2020 we will be there.

## Conclusion

The study tried to show how 7-point Agenda has been subsumed under vision 20 2020. The vision is a long term project but the 7-point Agenda is to address basic immediate developmental needs affecting the nation. Agriculture and nutrition which is part of food security are vitally important issues and need to be part of our effort to fight poverty, development and wealth creation. The focus group used for this study enumerated some of the problems as follow: lack of personnel to operate their processing machines; delay in delivering fertilizers and other farming seedlings by government; Inadequate fund to pay for labour and seedlings; difficulty in transportation due to bad roads; lack of storage and processing facilities; and inability of the government to fulfill most of their promises. Strategies like training of the rural farmers, encouraging them to form cooperatives among themselves will enable them to get things easily from government. It suggested that the librarians should repackage the information in the language and in form of drama, use of songs, storytelling, photographs, paintings, drawings, diagrams, films, charts, posters. It was also suggested that they can involve chiefs, town crier, hand bills, extension services and of mobile libraries. The libraries can also use town unions, age grade organizations, cooperatives, market unions. With all these the farmers will gain the right information and make agriculture to regain its position in the Vision 20-2020.

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## **Information Literacy: A Catalyst for Health Information Seeking and Empowerment among Women in Rural Communities in Nigeria**

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### **Introduction**

Nigeria is the most populous country in Africa with a population of about 140 million (2006 National Population Census). Of this number, over half (51%) live in the rural areas. The majority of the poor, illiterate rural dwellers are women.

For several decades now, women empowerment has been an issue of great concern especially among developing nations such as Nigeria. Given the fact that over 50 percent of the total world population is made up of women, their empowerment, health, and well-being is crucial to the development of any nation and to the attainment of the Millllennium Development Goals. Arising from the Beijing conference of 1995, the concept of women

empowerment took a firm root as one of the strategic objectives under the women and health platform for action.

(UNITED NATIONS ENTITY for Gender Equality and the Empowerment of Women, 2011).

In Nigeria, with an oil rich economy, nearly seven million school aged children are not in school. Some 56 percent of them are girls who will sooner become women (UNICEF, 2010). What is the future of these girls who are the women of tomorrow? The norm in many rural communities is to educate the male child, the girl child should stay at home to assist with the menial labour. Her education is not important, after all, she will soon grow up and get married so why waste precious resources on her? So on goes the vicious cycle of illiteracy – ignorance - sickness and poverty.

Nigeria is a country rich in cultural diversity but there is a common point of unity which cuts across tribe and tongue – female subjugation. Ours is a male dominated society with many harmful socio-cultural practices against women. Little wonder then that UNICEF and partners in 2008 made concerted efforts to bridge the gap in girls' education in Northern Nigeria by launching the Nigerian Girls Education Initiative (NGEI) in Bauchi. (UNICEF, 2010).

It is quite gratifying to note that most of the Millennium Development Goals (MDG's) are centred around women. This paper however, focuses on the health and gender related MDG's 3, 4, 5, and 6. The main thrust of this paper is that information literacy skills when taught to rural women, will lead to empowerment, active health information seeking, hence access to sexual and reproductive health information.

For the Millennium Development Goals to be achieved, the plight of women in the rural areas who make up the larger percentage of the rural poor cannot be ignored. Literacy is a very potent tool for empowerment; moreso when the specific target group to be empowered are the women in the rural areas of our country. Information literacy can serve as a catalyst for the achieving the health related MDG's in Nigeria. Teaching information literacy skills to rural women will reduce if not completely bridge gender gaps in health information seeking.

### **Definition of Basic Concepts**

Some basic concepts are defined based on the context in which they are used in this discussion.

1. **Catalyst:** a catalyst is something which expedites action but which itself remains unchanged. In this case, information literacy skills quicken the process of health information seeking and empowerment but remains constant.
2. **Empowerment:** the process involves the ability to make informed choices about life and to be able to take charge of ones' life economically, socially, and health wise. An empowered woman seeks the information she needs to make informed decisions about her life and family. UNESCO (2008) defines. Empowerment as the ability to direct and control one's own life.
3. **Literacy:** the ability to read, write and compute in any language at a level that is adequate for communication.

4. Health Information Literacy: is the ability to read, understand and act on health information.

5. Information Literacy: the ability to critically locate, evaluate and use information (Stem, 2002)

### **Information Literacy: An Overview**

Information literacy is the ability to access, evaluate, organize and use information in order to learn, problem-solve, make decisions in formal and informal learning contexts, at work, at home and in educational settings (Stem, 2002). It is a skill which has been linked with critical and effective thinking.

Information Literacy encompasses knowledge of ones' information needs and concerns, and the ability to identify, locate, evaluate, organize and effectively use and communicate information to address issues or problems at hand; it is a pre-requisite for participation in today's society and is a basic part of the right of life long learning. Possession of information literacy skills in conjunction with access to essential information and effective use of information plays a leading role in reducing the inequalities within and among countries and peoples, thereby bridging the gap among the poor and the rich countries and hence bringing us nearer to achieving the MDG's. An information literate person therefore can be said to be one who has developed an effective information gathering style.

In Nigeria today, women occupy the lowest rung in the social ladder and most often live below the poverty line. According to UNICEF (2010) about 70% of the total female population are poor. Due to the central place of the woman's role in any household, she bears the greater brunt of poverty. All this takes a toll on the woman's health. Many times she has to rely on her limited skill and knowledge for survival. In Nigeria, a very poor person is most likely a woman and more often than not, a poor person is a woman. In most of rural Nigeria, women make up most of the agricultural labour force. They cultivate the land, weed, harvest, process the crops into food in addition to their household and family responsibilities. The rural woman is a super woman.

Unfortunately, the women are hardly acknowledged, they don't own land and they are victims of harmful socio-cultural practices and subjugation (Hilhorst, Van Liere, Ode and De Koning; 2006).

### **Rural Women in Nigeria**

Women and women headed households are often the poorest groups within rural communities. Men have higher social status and as a result have more access to education and training. The productivity of this rural poor is further diminished by ill health due to HIV/AIDS, tuberculosis and malaria among others.

With respect to gender, women are most affected by the HIV/AIDS epidemic in Nigeria. It was estimated by UNAIDS (2006) that women accounted for 61.5% of all adults living with HIV/AIDS, aged 15 and above. This was ascribed to low literacy levels and lack of empowerment. HIV/AIDS is a major health problem. Ugwu (2009) asserted that the HIV/AIDS crises has worsened the subordinate status of women and girls in Nigeria. He noted that due to the epidemics disproportionate impact on women it has given rise to a new reality; the feminization of the epidemic rooted in the economic dependency,

stigmatization and denial of women's rights. Harmful sociocultural practices such as widow inheritance, female genital mutilation, inability to negotiate safe sex, all these are due to ignorance and misinformation or lack of information. A crucial element in HIV/AIDS prevention is information about prevention methods, screening and treatment options.

### **Health Information Seeking Among Women in Rural Areas of Nigeria**

Health as defined by the (World Health Organisation (WHO,1992) is not just the absence of disease or infirmity but the state of complete mental, social and physical well-being. Women have every right to enjoy good health. Health and well being however elude majority of Nigerian women especially those in the rural areas. Saleh and Lasisi (2011) in a Northern Nigerian study observed that women tend to be the primary seekers of health information for themselves, their children and other family members. They identified Agricultural information as the most sought after followed by health information. Specific health information sought by the women included information on ante-natal, post natal care, immunization for the six childhood killer diseases, prevention of vesico vagina fistula (VVF), control of epidemics such as HIV/AIDS, cholera, meningitis, reproductive and sexual health issues, obstetric emergencies and family planning. All these are necessary for the well being of the community and society at large. Sources of health information which were used by the women included: local government information office, mass media (radio), agric extension workers, medical personnel at rural health facilities, community leaders, teachers, friends, relatives and market women. The main source of information was from friends as the mass media was considered a luxury only the men can afford. Certain problems were identified which hindered access to information. These included:

- Low literacy levels
- Poverty
- Skepticism of the rural women towards government and its information agencies
- Inaccessibility of the rural areas by NGO's

### **Why Teach Rural Women Information Literacy?**

The low social status of women in the traditional Nigerian society adversely affects their health status. In the traditional Nigerian society which obtains in the rural areas, the girl child is regarded as being of lesser value than her male counterpart. It's a well know fact that education plays a significant part in health outcomes. It therefore, logically follows that rural women's low literacy levels will affect their health information seeking behavior. It is therefore proper that they be taught information literacy skills as a health intervention strategy.

Factors which affect the health of rural women include: work load, stress, and poor nutrition.

In the rural setting the effect of work load is more pronounced due to the long working hours in the farm, with little rest. Consequently, rural women are less healthy, less educated and lower down in local chains of access to food. The rural women are disadvantaged since they have to combine their reproductive roles with child bearing without access to modern facilities and techniques. In addition, harmful socio-cultural practices against women such as: Patriarchy, inheritance laws, widowhood practices and female genital mutilation are the norm in most rural communities.

## **Information Literacy: A Catalyst in the Achievement of Health Related MDGs in Nigeria**

At the Beijing conference in 1995, the United Nations realized the centrality of women in the developmental process of any nation. In 2000, 189 nations of the world met and agreed to free people from extreme poverty and multiple deprivations. This pledge led to the declaration of the Millenium Development Goals (MDG's) which are to be achieved by 2015. Again, in 2010, the nations of the world again made a recommitment to accelerate progress toward the achievement of these goals.

The Goals are as follows:

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnerships development

Of the eight goals, 3,4, 5, and 6 have to do with women empowerment and health which is the focal point of this paper.

Progress report on the MDG situation in Nigeria revealed that the primary school enrolment rate increased to 88.8% but with corresponding increase in drop out rates, indicating poor learning environment. Only 23% of girls and 45% of boys recorded secondary school attendace. Child labour stood at 13% while Child marriage is still as high as 39%. The under 5 mortality rate, though recording steady improvement over the years stood at 138 death (before the fifth birthday) per 1000 live birth (18th position in the world), and infant mortality of 75 deaths (before the first birthday) per 1000 live births. Only 43% completed the DPT3 vaccination and 53% were vaccinated against tuberculosis. Only 20% of adolescent girls and 28% of adolescent boys have comprehensive knowledge about HIV/AIDS transmission and prevention strategies. About 1.7million women of reproductive age group, majority of whom are rural illiterates are currently infected with HIV/AIDs needing urgent assistance in order to survive the ravaging effect of this deadly disease. (UNDP, 2011).

Evidences abound to support the different efforts of several developing nations including Nigeria to meet the targets of the MDG's, however, the progress has been rather very slow. Teaching of the information literacy skills especially among the underserved rural women might be one of the missing link. Okonofua et al( 1992) observed that although 75% of all maternal deaths in Africa are attributable to direct obstretics complications, it is now clear that these complications only arise within the context of severe socio economic deprivations

in these nations. They noted that the incidence of maternal death in rural women exposed to information literacy skills or a minimum of secondary school education is as low as the rate recorded in more advanced nations of the world

It is therefore obvious that for the realization of the MDG's in Nigeria, the underserved, vulnerable populations in the rural area cannot be ignored.

Rural areas in Nigeria are characterized by high poverty levels, low literacy levels lack of social amenities such as pipeborne water, good roads, electricity and a public library. In the midst of all the squalor, the rural women against all odds struggle to eke out a living for their families. Notwithstanding their multiple roles as wives, mothers, caregivers, traders, many of them provide most of the unpaid labour for their agricultural activities which is the mainstay of the rural farming communities. These rural communities are the food basket of the nation.

The health status and empowerment levels of these rural women is therefore very crucial to the sustenance of the family unit, the community and the nation at large.

The women folk must therefore be empowered through the acquisition of information literacy skills. This will lead to active health information seeking and hence they will be able to make informed choice and consequently take charge of their health and life. With this emphasis, certainly there will be better health outcomes for their families, the community and we will be brought closer to achieving the health related MDG's by 2015.

### **The Big Six Approach: Blue Print for Teaching Information Literacy Skills**

According to Stem (2002) information literacy enables one to evaluate information and its sources critically and to incorporate selected information into his or her knowledge base or value system.

The big six approach is a widely known approach to teaching information literacy (Eisenberg and Berkowitz, 2001). According to Eisenberg and Berkowitz (2001), it can be adapted for adult training programs.

The Big 6 is a process model of how people irrespective of age or gender solve problems. The developers of the model contend that information problem solving encompasses six stages with two substages under each one viz :

#### 1. Task definition

- Define the information problem
- Identify information needed

#### 2. Information seeking strategies

- Define all possible sources
- Select the best sources

#### 3. Location and Access

- Locate sources

- Find information within sources

#### 4. Use of information

- Engage (e.g. read, hear, view, touch)
- Extract relevant information

#### 5. Synthesis

- Organize from multiple sources
- Present the information

#### 6. Evaluation

- Judge the product (effectiveness)
- Judge the process (efficiency)

This model can be adapted to suit the rural women in Nigeria. It can be taught using the local language in graphical and audio formats.

### **The Role of Libraries**

Libraries are fundamental in the development of literacy skills which ultimately enhances an individual's chances in life as well as ensuring the ability to climb the wings of the socio-economic ladders at the societal level. Again, librarians especially those in the rural stand in the gap between the people and the information material. As knowledge seekers, they have to provide the information in a suitable format which will be useful in meeting the rural women's health information needs.

In Nigeria for instance ours is an oral culture. The librarian can teach search strategies and repackage information using talking books.

Talking book is a programmable audio computer that has locally relevant knowledge and improves literacy. It was designed specifically for people who cannot read and who live without electricity. Local experts spread knowledge reliably and easily with no information loss. Rural teachers complement their lessons with interactive applications and audio books. The talking book shares vital knowledge among poor, rural communities.

Rural libraries can purchase talking books and record information about health and education in their local languages and dialects. A short demo could be offered on how to use it, he can record information on an audio cassette. Seeing that some of the roads in the rural areas are not motorable especially during the rains, the rural librarian must be motivated and enthusiastic about his job with empathy for the vulnerable, poor, mostly illiterate villagers.

Resource persons, opinion leaders and key community leaders such as retirees, teachers and Agric extension workers should be identified and trained using the big six approach. They will in turn train the women. The rural library will serve as more of a community information centre

The librarian in the rural area will have to move around the community carrying out a health needs assessment in order to meet the actual needs of the people not just assumed information needs.

On market days a referral booth should be set up in the market place and during the women cooperative meetings. Wherever the women are found a librarian should be there with relevant information materials. Nothing stops the rural library from conducting literacy classes on certain days of the week when the women come from farm.

When community partnerships are built, the librarian would have the trust of the women and thereby assist in transforming lives through better information strategies which will ensure better health outcomes and bring the Nigerian rural populace closer to the attainment of health related MDG's.

## **Conclusion**

Having ascertained that information literacy is a viable tool for the empowerment of rural women and improved health information seeking behaviour, this paper advocates the teaching of information literacy skills to rural women. When they have acquired information literacy skills, they will be able to take control of their health decision making based on the information gathered. Information literacy is not a panacea for illiteracy and poor health outcomes among underserved populations. It is an empowerment tool.

Rural women are empowered for life long learning. Informed choices can be made based on available information. Feedback will be provided for the librarian whether the information provided is useful or relevant.

Based on the big six model, the rural women will gradually but surely evolve to more confident learners who will teach other women and they in turn will incorporate the selected information into her knowledge base and value system. The acquired information will then be put to good use. In the final analysis we as librarians will build healthy rural families and communities which will form the bedrock for achieving the health related MDG's in Nigeria.

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## **Public Libraries as Community Kitchens: An Overview of Public Libraries in Lagos State**

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### **Introduction**

Public libraries are democratic institutions, critical to the development of socio-economic well being of any nation. They acquire, process and disseminate information in a variety of formats to every citizen in the community where they are located regardless of race, gender, age, etc. Public libraries also employ all kinds of services to ensure that information get to the generality of the populace at the most convenient time and place. Plessis (2008) proposed that public libraries in Africa should function like community kitchens. He viewed African public library as still providing a kind of information services similar to 'food silos', where a uniform food type are served to some people as against the 'community kitchens' where variety of foods are served to everybody. A Community kitchen is sometimes called a cooking club or a collective kitchen where a group of people meet regularly to cook food and take home to feed their family. In a community kitchen every member contributes by

planning, preparing and cooking food ([www.wrha.mb.ca/health/info/prohealth/nutrition/files/Nutrition\\_3.pdf](http://www.wrha.mb.ca/health/info/prohealth/nutrition/files/Nutrition_3.pdf)). The analogy of food and information was also made by Shapiro (1971; 2010). The writer stated that:

what food and oxygen is to the body, reading means to me....;

...the mission of public libraries is to nourish the mind. The mind lives within the human body. When the human body gets hungry, it often leaves the library.

The writer argued that in a knowledge economy we need to retain everybody in the library. To do that library has to make provision to nourish both the mind and the body. When public libraries provide variety of information, they should also provide cafeteria with healthy foods that take care of 'different people's dietary needs'. The whole essence of all inclusive public library services is to ensure that people do not find any reason not to use the library.

The importance of modern public library services has been acknowledged globally. It is obviously impossible for any individual or nation to participate in the global conversation without having adequate information. Access to information is vital if an individual is to function effectively in the present day information age (Atimo, 2000). Just as it is impossible for mortals to survive without good nutritious foods, it is equally tragic not to have adequate information in the knowledge economy. In other words there exist a close relationship between the underdevelopment of most African countries and the high illiteracy level in them. To be accepted and equally participate in the global market place the public libraries in Africa must strategise. Recounting myriads of problems will not do any good. Instead best practices from the developed world and the IFLA/UNESCO Public Library Guidelines (Gill et al, 2001) on public libraries should be employed.

The core mission of public libraries is information, literacy and public education but they can also serve as a valued asset in meeting a community's strategic goals (ICMA, 2011). Thus, public libraries provide variety of information resources and services that aim at meeting the variety of information needs of the communities they serve. These needs cover a variety area of life- politics, economic, social and culture (Alokun, 2003). ICMA reported that in 2009, 169 million people in the United State visited a public library to find work, apply for college, secure government benefits, learn about critical medical treatment, and enjoy access to the internet. However, in Nigeria, people, mostly students, visit the public libraries to read for their examination and nothing more (Udeze, 2009). This is because the libraries apart from providing a noiseless atmosphere are not providing the kind of information that people need to solve their individual problems.

For public libraries to be relevant in this age of technology they must be ready to scan their immediate environment in order to ascertain the kind of information needed by people they are serving. Community information services are currently pursued by the developed countries. Community information service was introduced by public libraries in the Western countries in response to an expressed need at a time when general library service was more or less universally available. There was, however, a need to focus on that section of the community which required problem-oriented information and assistance. It is interesting to note that this shift took place at about the same time when the profession started moving away from the traditional "functions" of public libraries towards defining their specific roles for specific communities (Anwar, 1996).

The traditional public library system provides information to only people who visit the library. It appears that public libraries in Nigeria still operate the traditional public library system; and traditional librarianship can no longer satisfy the needs of the Nigerian population (Ene, 1979). ICME (2011) pointed out the credibility the library should have with the citizens as a significant community asset and commented that the library is at 'risk of being underutilized when limited to its traditional roles...'

The traditional library practices which wait for people to come to the library in order to use the information they need is unacceptable judging that a lot of people in Nigeria cannot still read and write. The illiteracy level in Nigeria stands at 80%. Therefore, services provided by the library must be based on positive objectives and related to community's needs and interests, and also must be made accessible at convenient places and hours for the users (John-Okeke, 2009).

The metropolitan Lagos which this paper focuses on is a complex society with highly literate professionals, some illiterate artisans, market men and women, business tycoons, many students including school children. Among these groups are also the disadvantaged – physically challenged people and the institutionalised people. The population of Lagos is 8,048,430 by the National Population Council Census of 2006 and is the second largest populated city in Nigeria after Kano State. Being the former capital of Nigeria, it houses a lot of embassies; with sea ports and an International Airport. To satisfy the information needs of this heterogeneous group, the public libraries must be ready to provide information for different social class. It is expected that information in different languages and formats should be provided and services such as the mobile library, outreach programme, literacy programme for adult and children; and internet are provided.

This paper seeks to examine the resources, services and infrastructures available at public libraries in Lagos State. The data collected will be used to ascertain the effectiveness of their resources and services in meeting the varying needs of the people living, working or doing business in Lagos.

### **Objectives of the Study**

The objective of this survey is to find out the effectiveness of public libraries in Lagos State in their efforts to provide information services for such a growing population. The survey is set to answer the following questions:

1. Do they libraries provide information in a variety of media?
2. Are there electronic sources, e.g. computers, internet, CD-ROM, Multi-media in the libraries?
3. Do the libraries pursue programmes like bookmobile, book barrow, and readership campaign?
4. Are the buildings all inclusive, providing for all categories of users?
5. Are there collaborations with other libraries?
6. Who funds the library?

7. Are there other alternative means of funding apart from the government?

8. Do people use the libraries?

### **Background**

Lagos State has an area of 358,862 hectares. The rate of population growth is about 275,000 persons per annum and has population density of about 2,594 persons per sq kilometre. In UN study (1999) the city of Lagos is expected to hit 24.5 million population and thus be among the ten most populous cities in the world by 2015 (Wikipedia, the free encyclopaedia). The oldest public library in Nigeria is the Lagos Library established in 1932. The Lagos public library was established in 1946 with 3,638 collections which grew up to 5,000 by the end of the year (Thanni, 1978). Its name changed from Lagos Public Library to Lagos Municipal Library in 1952. The United Nations Information Services Library in Lagos was established in 1951 for the projection of the American ideologies. Okorie (1953) observed that it is the only public library that provided free services to readers then. In the 70's public library services in Lagos State was provided by the Lagos Island and Lagos Mainland Local Governments Libraries which provided free library services to all residents of the city of Lagos (Thanni, 1978). The libraries opened to the public on Monday – Friday from 8.30a.m. – 8.00 p.m. and on Saturday from 8.30 – 5.00 p.m. Their services included answering 'commercial and industrial queries', provision of a wide range of indigenous music, bulk loans of library materials to the prison, and library services to the Old People's Home and children.

Public libraries are social institutions established by state or local government and usually supported by the community where they are established. As a rule they are established by laws and funded by the government. This is to ensure sustainability in terms of continuous funding and staffing. The Lagos State Library Board was established in 1980 by Lagos State Law No. 24.

Studies in public libraries services to the communities in Nigeria are not lacking. However, most studies are on services to the rural dwellers. Not much has been done on urban dwellers, like people living in a metropolitan city such as Lagos. Most researchers on public libraries in Nigeria shared the same view that there is a concentration of public libraries in the urban areas (Ebiwolate, 2010; Nwalo, 2000). However, considering the population density of urban areas it would not seem that there are enough of the public libraries in them.

The Lagos State Library Board has only eleven public libraries - the Secretariat Library at Ikeja, ten divisional libraries. Most Local Government Areas have local government libraries. The distribution of the State public libraries is as follows: Ilupeju, Ikorodu, Badagry, Isolo, Ajegunle, Yaba, Mile 2, Epe, Ipaja, and Agege. Sanwo (1978) delivering his address to NLA, Lagos Chapter observed the inadequacy of public libraries and their services in Lagos. He commented:

... library services have not grown with the growth in the educational development and the increased urbanisation in the Lagos area. With the constant movement of population centres, especially in Metropolitan Lagos, the Association will do well to keep in view these movements so as to adjust the programme of library services to be able to reach the people.

It is with pomp and pageantry that the Badagry Divisional Library was opened on 30<sup>th</sup> December, 1981. The Chairman of Lagos State Library Board then stated that the library will provide the following services and facilities:

- Adult section – lending and reference services
- Children's section
- Lecture/conference and study rooms
- School library services
- Special collection rooms
- Mobile library services
- Exhibition hall
- Open air roof garden (Ojo, 1979-81)

By 1986, the Board had seven branches (Olanlokun, 2001) which has grown to eleven presently. A survey of the adequacy of public libraries in Lagos metropolitan area revealed demand for additional public libraries in the Lagos area (Olatunde, 1980). Omuwunmi Segun also discussed the inadequacy of public libraries in Nigeria. She observed that many local governments in Lagos have libraries; Surulere Local Government has a beautiful structure but nothing more (Ajeluorou, 2010). Merry Hearts Foundation (2010) shared the same view when it said that in a state densely populated as Lagos, filled with so many bright minds, we need more than eleven (11) branch libraries .

#### Public library services to the urban community

Urban cities are complex societies. Lagos state is one of the highly heterogeneous societies of the world. With only eleven public libraries which have not equally expanded to meet up with the escalating population and very few local government libraries, it becomes highly impossible to meet with the present demand for information by the communities. Anwar (1996) observed that the information needs of the rural population are simpler and easier to identify and satisfy than those of the urban society, which are highly complex and difficult to meet. According to Anwar:

the accelerated growth of urban communities in Malaysia has created a variety of problems, especially for the disadvantaged segments of the society. Public libraries have a legitimate role to play in alleviating these problems. It is, therefore, imperative that the information needs of the urban population be investigated as soon as possible.

Natehill (2008) also commented on the importance of understanding urban communities which are in a constant state of flux. Discussing this problem as it affects the Brooklyn Public Library, he argued that:

demographics in Brooklyn change rapidly and it is difficult to provide needed services with a limited budget and aging facilities in fixed locations. This presents a challenge for the library. Many of BPL's branches were built in the first two decades of the 20th century; since then entire communities have moved, disappeared, shifted, and grown. Library facilities have not been able to follow the people as community centers and business districts migrated to new areas.

In Lagos State sixteen local government areas are considered to be metropolitan Lagos. The non metropolitan Lagos is Epe, Badagry, Ikorodu and Ibeju-Lekki. In the urban area of Metropolitan Lagos, the average density is 8,000 persons per square kilometre. Ikorodu and Ibeju-Lekki are presently witnessing population growth. Many people have relocated to

these areas because of accommodation problems in the metropolis, and also because of the growing industries and businesses in the 'new Lagos'. The problem is that library services are very minimal in these new areas. Ikorodu for instance has a population of 353,615 and has only one public library to serve the information needs of the people. To be able to provide adequate information services more libraries should be built and also mobile library services should be resuscitated.

Natehill (2008) rightly explained that:

To be able to adequately reach everybody in urban areas a mobile library service may be the most economically viable way to provide a library service to some communities. A permanent building with its own stock to cater for the needs of a large district may not be economic or desirable if that district covers a range of different communities, containing potential users with various needs. The communities may be changing too rapidly for an authority to know where to put a permanent building, so that it can offer the maximum benefit. In these cases, a mobile service is a quick and flexible solution to library provision.

### **Mobile Library Services**

Hunter (1998) defined a mobile library to mean a large vehicle which is ... 'devised, equipped and operated to provide, as far as reasonably practicable, a service comparable to a part-time branch library'. A mobile library can be used to introduce a library service to a variety of different client groups in many different areas - such as small communities without adequate library facilities; urban fringe areas; city neighbourhoods without a branch library within a reasonable distance; areas isolated by natural or man-made barriers; and rural areas. Forms of mobile library have existed in the United Kingdom for over a hundred years. According to Hunter in the USA, mobile libraries were pioneered by rural library authorities. The first library authority to make the mobile library a regular and recognised feature of its service was in a city. Manchester library authority was struggling to meet the needs of the new housing estates on the fringes of the city, as the money to create new branch libraries was not forthcoming. The answer was the mobile library, which was known at the time as a 'bibliobus'.

In Nigeria mobile library was introduced to library services in Nigeria in the 70s. According to Yobe, (1978) as cited by Abolaji, (2009):

The Rivers State Library Board launched — 'M. V. Knowledge 1' on 21st March, 1978. It was a mobile library operated in a boat. The boat library attracted visitors from all corners of the country apart from users in the Rivers State who were the primary clientele. The boat had a capacity for 2000 volumes.

Today, the mobile library services have disappeared from the Nigerian library services.

In Chile the public library service has developed a variety of mobile services, bookmobiles, book boats, book boxes, backpacks and bicycles. The services offer books and cultural activities for all ages and travel across all terrains. They also serve rest homes, hospitals and prisons (Gill et al, 2001). With the economic recession globally and also the urban drift occurring in Lagos State a more practical approach to library services is needed. Rather than wait for the governments to build more libraries, librarians should find a way of bringing back mobile library services.

## **Literacy Programmes for Children**

IFLA/UNESCO Public Library Manifesto, 1994) provides that public library has a responsibility of 'Creating and strengthening reading habits in children from an early age'. (Gill et al, 2001) opined that:

it has a special responsibility to meet the needs of children and young people. If children can be inspired by the excitement of knowledge and by works of the imagination at an early age, they are likely to benefit from these vital elements of personal development throughout their lives, both enriching them and enhancing their contribution to society. Children can also encourage parents and other adults to make use of the library.

Simisaye and Quadri (2010) reported the Lagos State Library Board Summer Reading Programme during vacation to inculcate and stimulate reading habit as well as encourage children to be regular library users. It was initiated by the Lagos Office of British Council in 2004. The first tagged Rollercoaster Children Reading Challenge Programme supported by British Council. Since then has been held annually by the Board in all its branches. The programme is for children between the ages of 4-12 from Monday through Friday and last for 2-3 hours daily. About 400 hundred children participated every year and registration is free. He highlighted the activities as:

- Book review
- Story hours
- Dictations
- Games-word game, scramble, Ere Ayo (local game)
- Library orientation – such as library ethics; library registration, types of library materials, etc
- Care of books and library materials
- Creative arts such as drawing, painting and decoration, singing, etc.
- Essay writing and composition.

This programme is very important as it supports the Federal Government programme to 'catch them young'. However, it should include more children to the programme in order to make impact to the community and also to enhance the credibility of the library.

## **Outreach Programmes**

Library outreach services are complex aspect of library services. The purpose being to provide information to people that ordinarily may not have access to it (Alokun, 2003; Aina, 2004). Ene (1979) shared the same view:

In a community like Nigeria with small percentage of literacy, public appreciation of library services might be better developed through book reviews on the radio and television, film shows, cultural displays, art exhibition, folktale session, story classes or lectures.

The services provided are similar to the mobile library services. It could be inform of book fairs or exhibitions that will bring information materials to a large group of people or a specialised group who ordinarily will not have access due to some barriers posed to them. Natehill (2008) developed a unique model outreach programme which he termed Library Outposts. He explained:

Library Outposts are storefront library service points, no more than 1500 sq. ft. in size, centrally located in busy commercial districts or near transportation hubs. The space is easily transformable; one moment a silent reading room, another moment a performance art space, another moment a forum for a community group meeting. The Outpost model takes advantage of emerging technologies to reconsider the distribution of library content and materials (you know, like books, DVDs, etc.) and invent itself as something entirely different.

He articulated the features as:

- Strategic location - a small space in a commercial area, a business improvement district, or a transportation hub.
- Extended service hours - open from 8a.m until 10p.m, giving the community access to library materials, exhibitions, and programs during the times most convenient to them.
- Collection available via online - will connect users to all library materials via the catalog.
- Reference service - staff will provide exceptional reference services using online databases and internet searching strategies.
- Wireless access and digital library content.

### **Programming and Exhibition**

Outreach programmes are important if the libraries are committed to taking information to the people. They are particularly important to reach the "less fortunate ones who are confined in the hospitals, remand homes and prisons as well as the physically handicapped – the deaf, dumb, lame and the blind" (Ene, 1979). ICMA (2011) commented on the attitudinal changes that must take place in libraries recognizing that during financial crises the library is usually the first to be affected. If the library at this point 'focuses on collections and circulation, it risks at best being underutilized and at worst being marginalised'. If the public library wants to be more engaged with community priorities the library must reach out to local government and community partners.

### **ICT and Public Library Services**

Modern public library services cannot be possible without appropriate technologies. The present day information architecture is web enabled. The internet information environment is highly democratic allowing access to all without any form of restriction apart from having access to the computer and having to connect to the networks. In this day of wireless network once you have a computer and a modem you are connected to the greatest information network. Pors (2010) observed the tremendous changes that have occurred in public libraries during the last decades. The changes are associated with technological development. He gave as an example, Denmark who has made it mandatory for public libraries in Denmark to provide 'music and internet access and similar services'. Bibliotek.dk is a database including collection data from all types of libraries in Denmark which allows every citizen the right to order a book a CD, a DVD or other kind of materials delivered to a library of own choice without charge.

The purpose of the public library as given by IFLA/UNESCO Public Library Guidelines (Gill et al, 2001) supports the idea of ICT in public library:

The primary purposes of the public library are to provide resources and services in a variety of media to meet the needs of individuals and groups for education, information and personal development including recreation and leisure. They have an important role in the development and maintenance of a democratic society by giving the individual access to a wide and varied range of knowledge, ideas and opinions

A vital role for the public library is to bridge that gap by providing public access to the Internet as well as providing information in traditional formats. Also, the IFLA Internet Guidelines, 2006 provides that:

Freedom of access to information, regardless of medium and frontiers, is a central responsibility of the library and information profession (Lake, 2007).

In Nigeria ICT penetration is very limited. Apart from universities and some special libraries that have computerised their services, most of the libraries lack computers and internet connectivity. Omuwunmi Segun in an interview with Guardian lamented Nigerians' low perception of public libraries; whereas public libraries are perceived abroad as 'social spaces, where you can watch TV, do internet or other social activities' (Ajelourou, 2010). She argued that the kind of population Lagos has will not encourage physical infrastructure. Instead online services should be encouraged. With online library services a large number of users will use the library without visiting the libraries physically. It is also important to note that the traffic congestion of Lagos does not allow easy movement from one location to another. Therefore, online services should be employed if the public library is to fulfil its social inclusion role. Otherwise, so many people will be excluded from their services thereby widening the gap between those who have information and those who do not have.

### **The Present Study**

The study of public libraries in Lagos State was undertaken for the purpose of finding the effectiveness of the libraries and their services. Five divisional libraries and three local government libraries in Lagos State were visited. An interview method of data collection with direct observation was employed. The data generated through the interview with the Chief Librarian of the Secretariat Library and other Chief Librarians of the Divisional Libraries; and HODs of the local government libraries are interpreted below.

### **Data Analysis**

The data collected from the study are presented as follows:

#### **Infrastructures**

It is observed that people mostly young adults who are reading for one examination or the other use the libraries. It is obvious that the spaces provided are very small to comfortably accommodate more users. There are no air conditioners in the libraries so the libraries are not conducive for learning. The libraries' premises are so small that it can hardly provide a social place for recreation.

#### **Collections**

The libraries collections are poor. The entire public libraries' collections in Lagos State put together is not more than 50,000.00 judging that the Public Library at the Headquarter in

Ikeja has about 4,820 stocks with few CDs; Ikorodu Divisional Library has a total collection of 4,500. Most of the books in the libraries are secondary school books. Information materials in local languages are available - Ijebu, Egun, Hausa and Igbo. Computers and internet services are very minimal at the Headquarter, Ikorodu, and Ilupeju Divisional Libraries. Some bound volumes of newspapers are available at Mainland Divisional Library at Yaba.

### Programmes/Services

Apart from the Readership Campaign for children organized annually, they are engaged in book fairs and exhibitions. Services to the disadvantaged groups in prisons, hospitals, etc. are totally absent as mobile library services have been stopped. The libraries are not open on Saturdays.

### Staffing

The Public Library at the Headquarter in Ikeja has a total of eight staff; the Chief Librarian being the only professional librarian. At the Ikorodu Divisional Library, nine staff are available among which is a professional librarian. It has been observed generally that local government libraries are headed by HODs that are not librarians; some of them school certificate holders.

### Funding

Funding situation in the public libraries is very poor. General irregularity in the release of funds from the government is prevalent in all the libraries. There is also very low participation of the community and organisations in developing the library. This explains why the collections are very poor and facilities very minimal in the libraries.

### Discussion

The library buildings do not in any way fit to the standard of public library by IFLA Public Library Manifesto, or libraries in the developed world. The library space provided in the libraries is grossly inadequate to compare to the number of library users who come to use the library. Peoples' need for library is very high. In all the libraries visited users were seen reading. The users are mainly young adults who are preparing for one examination or the other. This goes to explain that only few segment of the community is benefiting. Even at that the libraries do not provide current information but only a quiet place with limited facilities. The Kano State Library has four large floor spaces serving an average of 700 users daily and has more than 460,000 books and journals (Badawi, 2009) while the Library at the Secretariat serve only less than 100 users daily with 4,820 stocks. The adult literates and illiterates are hardly found in the libraries. From the facilities and collections of the libraries it is not expected that any serious research can be done in such libraries. No recreational facilities or oral programme that will accommodate the illiterate adults; libraries are not air-conditioned either.

Apart from the Readership Programme that is organised annually, no serious services to the children are pursued. The libraries do not open on Saturdays. Usually story hours take place on Saturdays when the children will be free from school.

The poor collections and inefficient services are as a result of poor funding and inadequate staff. Libraries all over the world are also experiencing cut in their budgets but libraries are also strategising and are involving local partnership in funding the library. No serious partnerships are going on in public libraries in Lagos State. The staffing situation is very poor too. As it is there are not more than eleven professional librarians in the eleven divisional libraries in the State. This number of librarians definitely cannot deliver efficient library services to the people.

ICT availability in these libraries is also very minimal. An average of two to three computers was found in each of the libraries; and there were also internet connectivity. It is important to note that no efficient library services can be achieved in an urban city like Lagos where the traffic is always congested without the libraries providing web based information services. Moreover, the population growth is alarming that no static library services can efficiently serve the citizenry. Unfortunately, the Lagos Library Board does not have a website and services are not computerised.

## **Recommendations**

Following the findings from this study these line of action are recommended:

- Professional Commitment- marketing services and increased outreach to hard-to-reach group.
- Creation of Working Group- Public Libraries Section of Nigerian Library Association should work with State Chapters to redefine the objectives of public library and develop guidelines for effective public library services in Nigeria. The guidelines should ensure that:
  - libraries are distributed and located to provide convenient access
  - hours of opening are adequate for users
  - adequate electronic access is available to users
  - adequate choice in books and other materials is available to users
  - sufficient qualified staff is available.
- Evaluation Mechanism: There should also be evaluation mechanism to constantly evaluate the appropriateness of the services provided in the libraries. Just as NUC accredit universities based on library resources' availability, an appropriate body should be constituted to evaluate the resources and services of public libraries.
- Funding: Funding is a major setback of public library services in Nigeria. Firstly, the commitment of librarians to new innovative services to the community will attract government intervention. Secondly, libraries should prove that they are truly valued assets to the community. This will attract community supports. The library managers must ensure that the community is aware of the importance of the library service. Government funding bodies should be made fully aware of the important place that the library occupies in the community. Thirdly, public/private partnership should be pursued if public libraries wish to promote equitable access and effective use of information. Public libraries must partner with fundamental social institutions, such as workplaces, schools, communities, organizations, government agencies and social services.
- Cooperation and networking among public libraries: Each library must take steps to affiliate itself with existing public library groups at national, regional as well as the international level.

- ICT: There is an urgent need to acquire more computers and internet connections to the libraries. The public library is the common man university. Studies have shown that ICT is not available to the majority of the people. Therefore public libraries should be able to provide ICT to the users. It is also important to emphasise the need for Lagos Library Board to create a website of its own and use it for online services. However, the libraries should first of all start automating their services.

## Conclusion

Public Libraries are strategically positioned to bring the entire citizenry into the global conversation. This they can achieve by acting as community kitchens providing information to everybody in the community. From the findings of this study, it is obvious that public libraries in Lagos State have not performed creditably well. Library services in Lagos State are grossly inadequate and bedeviled by poor funding, inadequate staffing and non commitment by the governments (state and local), librarians and the community at large. It is expected that librarians should be more committed to effective library services. This will increase the visibility of the library and consequently attract the attention of the government and the cooperation of organizations and companies who may want to support the library as a means of fulfilling their corporate social responsibility to the society.

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## **Availability and Use of Electronic Resources in African Universities: The Nigerian Perspective**

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### **Introduction**

In the past decade, there has been an increase in the availability and use of electronic resources in university libraries globally with few exceptions in some African countries. These countries had made efforts to introduce electronic resources in their libraries, which is present in many academic and research libraries in the continent. However, in some countries in Africa, the inequitable access to the Internet and electronic resources is attributable to the poor state of ICT infrastructure and lack of adequate investment on workers to support the new communication technology. In Nigeria, there is a disparity in the level of accessibility to ICT between some universities as some are enjoying maximum supports from NGOs. With this dwindling availability of electronic resources, the librarians and library users are having vague understanding of resources, therefore, making their use (if available) very low. Presently, many African Universities have made efforts to provide these electronic resources on their own. In the South African axis and part of the sub-

Sahara, many libraries are enjoying the availability and usability of electronic resources. Nigerian University Libraries in particular, can boast of access to databases such as E-Granary, Ebscohost, AGORA, OARE, HINARY, JSTOR and so many others.

Libraries of all sizes and types are embracing digital collections, although most libraries will continue to offer both print and digital collections for many years to come. New purchases and purchases of journals, magazines, and abstracting and indexing services are heavily weighted toward digital, while digital books (e-books) are only beginning to become a presence in library collections. Although, in Africa, the inequitable access to the Internet and electronic resources is attributable to the poor state of ICT infrastructure and lack of adequate investment on workers to support the new communication technology. In Nigeria, there is a disparity in the level of accessibility to ICT between private and public sectors of the economy. In most public institutions: such as universities, polytechnics, primary and secondary schools, and government ministries, access to ICT, if not completely lacking, is inadequate (Ani, Uchendu and Atseye (2007).

Many African countries have made efforts to introduce electronic resources in their libraries, and these can be seen in many academic and research libraries in the continent. Omekwu (2002) revealed that African countries are in different stages of electronic resources development and use. The use of electronic resources has contributed to reshaping information retrieval process and access to information. In the past, information was transferred from librarians to the users. Presently, most of the communication and transfer of information is between the users and the computers and this is due to the storage of information in the electronic resources which are usually operated with use of computers. There are several electronic resources in the African university libraries which include the Internet resources, electronic databases like the e-granary, CD-ROM, electronic journals and electronic books etc.

Several years ago, most of the African libraries did not have startup capital for the provision of these resources especially the CD-ROM because of the enormous amount involved. Many of the African libraries obtained their CD-ROM database through grants and donations from international agencies and foundations such as UNESCO, USAID, CTA, and the Carnegie Corporation of New York, the MacArthur Foundation and Rockefeller Foundation. In support of this view Asamoah-Hassan (2004) reported that African libraries are poorly funded. Owing to this, Non- Governmental Organizations (NGOs) have come into African libraries to assist in strengthening them to perform the functions expected of them. In 1989 for instance, Technical center for Agricultural and Rural Cooperation (CTA) launched a project to introduce CD-ROM technology hardware, software, bibliographic CD-ROM databases in agriculture and training in basic computer skills in literature retrieval in some African countries Massawe (1994).

With this dwindling availability of supposed electronic resources, the librarians and library users are having vague understanding of resources, therefore, making their use (if available) very low. Notwithstanding, the case is relative to countries as some library users who have the capacity to use information communication technologies find the digital resources easy to utilize. Presently, as the digital divide concept is waning, different individuals, especially in the academic world are beginning to appreciate the Internet resources and other e-resources they have access to.

## Literature Review

Electronic resources have been used to provide accurate and timely information, especially for students who depend greatly on the electronic resources for information to boost research and collaboration with counterparts around the world for intellectual growth. Information is in fact very crucial for the acquisition of knowledge and development. This explains the rationale for the introduction and acquisition of electronic resources in libraries around the world to facilitate scholarly communication.

In China, the Baozhalong Library in Shanghai Liao Tong University and Ocean Information Institute provided CD-ROMs including LISA, NTIS (National Technology Information Service) and MEDLINE for their users (Salanje, 1995). Salanje further revealed that by 1988, the University of Bahrain was subscribing to more than 25 different CD-ROM databases in science and technology, arts, social sciences, library technical services and general references. Also, that PAHO (Pan American Health Organization) integrated LILACS and REPIDISCA (their two health information databases) into a single regional database and started to pre-master a prototype CD-ROM version in early December of 1986 in San Paulo, Brazil. The provision of databases provided the users a way to access large bodies of information and to retrieve the needed information quickly. Also, libraries in China, Peru, India, Bangladesh and Cuba were among the selected group of 40 libraries in 24 countries that benefited from a donation of prototype disc with a total of 187,000 complete records from the CAB Abstracts databases which cover the period of November 1983 to March 1985 and from the database of the Bureau of Hygiene and Tropical Disease from donor organizations.

Owing to the presence of electronic resources, there is a reduction in the number of mediated searches in some libraries in America and Hong-Kong. This is because they find the CD-ROM easy to use (Salanje, 1995). Also, for immediate acquisition of information from remote places and for teaching, the University of Canberra in Australia provided Internet access to its entire academic staff (Applebee, Clayton and Pascoe, 1997).

Wishart (1999) discussed the advantages of the introduction of CD-ROM in the schools in the United Kingdom. He asserted that the installation of CD-ROMs in the schools increased the teaching role and status of school librarians, with 85% of schools locating CD-ROMs in the school library. Ormes (1998) reported improved services in Danish Public libraries with the provision of 42 public access computers with free Internet access (including several in the Children's library) via a leased line, in the Roskilde library while Silkeborg library offers free public access to the Internet on 17 computers. Moreover the Silkeborg library has a web server with OPACs and provides tourist information about the area. Also, Arhus library offers free public Internet access on 35 work stations and a web accessible OPAC.

According to Fayter (1998), to show the importance of electronic resources and to promote the use of Internet, a course titled; "Teaching and learning with the Internet" was introduced for lecturers at York University. Dew (2001) also revealed that due to students demand for full text information, the University of IOWA libraries in America purchased access to Ebscohost to improve educational outcomes. Similarly, the University of Toronto in Mississauga has one of the largest collections of electronic resources in North America including electronic textbooks and over 10,000 e-journals subscriptions. The McMaster University which has been actively collecting electronic resources has over 4,000e-journal subscription (Darimont, 2001).

Furthermore, John Rylands library in Manchester moved some of their materials out of the library into temporary storage to provide space for the use of electronic resources to provide accurate and timely information for their users. A study by Ray and Day (1998) on students' attitude to electronic information resources in university of Northumbria at Newcastle revealed that 37.5% of the students used e-journals as information retrieval tool.

According to Riedling (2004) the Cattagni and Farris statistics on Internet access in the U.S. public schools carried out in 2001 revealed that by the fall of 2000, 98% of public schools were connected to the Internet compared to 35% in 1994. Cattagni and Farris opined that the ratio of students to instructional computers with Internet access for teaching, learning and class projects in public schools improved from 9 to 1 in 1999 to 7 to 1 in 2000.

ERNETT India, a scientific society under the ministry of Communication and Information Technology, in partnership with the University Grants Commission (UGC) set up infrastructure for UGC-INFONET. The aim of the collaboration according to Chakravarty and Singh (2005) is to use information and Communication Technology (ICT) and Internet to transform their learning environment from a mono-dimensional to a multi-dimensional one. Also Chakravarty and Singh reported that to facilitate scholarly e-resources to Indian academics, UGC, INFLIBNET and ERNET interlinked universities and colleges in the country electronically in order to achieve maximum efficiency through Internet enable teaching, learning and governance.

Banionytė and Vaškevičiene (2006) revealed that in 2001 only 40% of public libraries in Lithuania were able to offer computers connected to the Internet for their users while all academic libraries enjoyed Internet services. In addition, due to several governmental and private initiatives in 2005 all Lithuanian public libraries, with the exception of all the branches in villages, offer Internet services for their users. This improved the patronage and use of the libraries resources (Banionytė and Vaškevičiene, 2006).

There is also a dominance of access to electronic journals in environmental, materials, medical and business studies in United Arab Emirate. According to Taha (2004), this dominance is due to the priority given to such fields of study by United Arab Emirate university research funding and graduate programmes. Taha opined that emergence of electronic journals in the library services improved efficiency of information practices as well as supported a range of research activities and trends. He revealed that at present the United Arab Emirate university library is wireless - networked throughout the five university campuses. The university library developed interactive web portal (<http://www.libs.uaeu.ac.ae>), which provides access and several options to search and reaches a wide variety of networked electronic resources and services.

Ibrahim (2004) stated that the web portal developed by the United Arab Emirate University provides remote access to a great number of electronic resources which includes full text databases like Emerald, Academic Search Premier, ScienceDirect and United Nation official Document System (ODS). Moreover the library has electronic books collection in food systems, engineering and philosophy through NetLibrary. Also electronic journals covering subjects and bibliographic databases like AGRICOLA and EcoNbase and collections of Internet resources indexed by subjects are available in their library (Ibrahim, 2004).

Electronic journals are highly accepted in the Netherlands especially by scientists and social scientists. Vakkari (2006) however argued that the high patronage enjoyed by e-journals is because it is readily accessible and functional, not necessarily because of its rich contents. Furthermore Dilek-Kayaoglu (2008) revealed that one of the barriers to the use of e-

journals as reported by 42.7% of respondents in his study is lack of awareness of e-journal services in their library. Other barriers are; not being familiar with the use of

In a study on information technology utilization and library automation in Malaysian Educational institutions, Teh (1997) revealed that more than 50 schools have their own World Wide Web or Web home pages. Teh also reported that in a local survey carried out by Laili (1993) On Online Public Access Catalogues (OPACs) usage revealed that a high percentage of users faced problems when using Boolean logic for searching. Also, Hart (1996) wrote that an empirical finding concerning goals of users searching OPAC at a Northeastern United States University revealed that respondents used OPAC only to search for course or degree related projects.

Presently, many African countries have made efforts to provide these electronic resources on their own. Discussing the status of Information technology in Zambia, Chisenga (1995) revealed that many libraries in Zambia subscribe to CD-ROM databases. He further reported that notable CD-ROM databases are at Mount Makulu Agricultural Research Station, the Tropical Disease Research Centre, British Council library and the Martin Luther King Jr. Memorial Library in Zambia.

Giving credence to this view, Makondo and Katuu (2004) wrote that as at 2000, the University of Zambia library had 29 CD-ROM database titles. The library was known as one of the first Southern African universities to have Internet connection in 1990. CD-ROM databases like AGRIS, TROPAG, CAB Abstracts, MEDLINE, AGRICOLA, SILVER PLATTER and POPLINE are available in most of the libraries and information units in Malawi. Kiondo (1997) posited that the 1993 introduction of CD-ROM at the University of Dares Salaam (UDSM) Library through the Carnegie Corporation of New York grant brought about the acquisition of two CD-ROM work stations, a laser printer and subscription to some CD-ROM databases. Also, Mutula (2000) wrote that a South African subsidiary of a US-based company National Inquiry Service (NISC) makes database available on CD-ROM. The service can be used by libraries in the region to publish their bibliographies on CD-ROM. Similarly, Chuene (2001) mentioned the acquisition of 49CD-ROM databases and introduction of Internet in the late 1990s at the University of the North, South Africa.

Many African countries have also provided Internet services for their libraries. Mutula (2000) reported on the establishment of websites by the University of Dar es Salaam in Tanzania and Makerere university libraries. He also wrote that Makerere University has dial-Up connection to a local Internet service provider (ISP). Mutula (2001) explained that East African countries (EAC) like Kenya, Tanzania and Uganda experienced problems with connectivity to the Internet due to the high prices of computer hardware and software. However he revealed that Makerere University in Uganda and Kenyetta University in Kenya benefited from the establishment of African Virtual University by getting equipment and Internet connectivity. This made it possible for them to gain access to electronic journals. Mutula further explained that there are operational networks in the sub-region such as the Regional Integrated network for Africa. The network connects Kenya, Uganda, Tanzania, Zambia and Malawi. The Eastern and Southern African network covers Uganda, Kenya, Tanzania, Zambia and Zimbabwe. There is also the Pan African Documentation Information Network (PADISNET) connecting 34 countries in Africa, among Kenya, Uganda and Tanzania; and the African Regional Standard Organization Network (ARSONET) which covers Kenya, Ethiopia, Senegal and Egypt (Mutula, 2001).

Magara (2002) opined that CD-ROM and on-line retrieval services were the most utilized electronic resources in Uganda. He posited that the availability of Internet in that country

enhanced communication and resource sharing among the communities. In his own study, Ojedokun (2001) wrote on the provision of access to the Internet through faculty and departmental computer laboratories as well as the library in University of Botswana. Ojedokun and Owolabi (2003) revealed that their respondents in University of Botswana were skilled users of the Internet only as far as its application in research activities were concerned in spite of the fact that University of Botswana, has its own website with full Internet access in their library Aina (2004).

Badu (2004) painted a dismal picture of information technology and resources in Ghana due to insufficient hardware, intermittent electric power cuts and staff attitude towards the new technology. Muswazi (2005) reported the availability of 40 computers and access to 52 CD-ROM and EBSCOHOST Internet subscription based full text databases and free web resources and services. He revealed that majority of his respondents' rated print sources higher than Internet sources and CD-ROM databases. However Badu and Muswazi's report does not dampen the fact that presently there has been a crucial growth in the availability and use of electronic resources in Africa more than in the late 1990s.

In Nigeria for instance, there was an increase in library use in University of Agriculture, Abeokuta. The increase was due to the introduction of The Essential Electronic Agriculture Library (TEEAL) that has 130 journal titles on an external hard drive (Oduwole 2005, Aboluwarin, 1996). The introduction of TEEAL helped research students to acquire information for their work. Sani and Tihamiyu (2005) also reported the availability and use of OPACs in university of Agriculture Abeokuta. In fact, Idowu and Mabawonku (1999) reported that 10 (76.9%) of university libraries in Nigeria had CD-ROM databases. Anasi, (2005) revealed that some of the universities like University of Ibadan, Ilorin, Jos, Lagos and Ahmadu Bello University, Zaria subscribed to ISI (Institute for Scientific Information) and Silver Platter Ebscohost for database CD-ROM. However Igbeka and Okpala (2004) posited that since the 1995 introduction of CD-ROM literature search into the University of Ibadan library system, the number of users of the CD-ROM facility was still very small as against the number of registered library users. This they revealed might be due to lack of current awareness or dissatisfaction of users.

At the University of Benin, the library is subscribed to so many journal databases as well as being a member of a consortium for the sharing of such databases like the Ebscohost. The library subscribes to HINARY, AGORA, OARE, JSTOR, LexisNexis etc. They also have E-granary (a database in a computer system which comprises of all subject areas) and it is hosted in the UNIBEN Network where every user within the network can have free access to the databases without internet connectivity. Few months into 2011, MTN foundation (A GSM service operator) donated an e-learning centre for the library. In the centre, there are lots of databases that can be accessed as well as other library routines exercises that can be executed at the centre viz: inter library loan and cataloguing using SABICAT.

Presently, many Nigerian universities have websites. Most of the universities are connected to the Internet thereby making it possible for students to interact with their counterparts around the world. They also obtain quality information through the Internet to boost their research. Jagboro (2003) in his study on Internet use at Obafemi Awolowo University, Ife (OAU), revealed that Internet access was provided to students and staff who do not have access in their various offices. Similarly, Sanni and Idiodi (2004) reported that the residential quarters at University of Benin were being networked for Internet access. They further revealed that there is a cybercafé where staff and students can access the Internet. Also, their library collection can be accessed through the Online Public Access Catalogue

(OPAC). Presently, the library is trying to host their OPAC into the Internet (WEBPAC), so that users outside the library or the institution can access the library catalogue system.

Ojokoh (2005) revealed that Internet access was provided to the Federal University of Technology Akure community through the university cyber café. He further reported that none of the respondents in his research work used e-mail to communicate with lecturers. Oduwole (2005) also wrote on the increasing number of universities connected to the Internet but he asserted that the services were plagued with problems ranging from limited number of work stations, inadequate help support services, queues, space problems and lack of proper co-ordination.

The existence of these problems however has not in any way dampened the provision of the electronic resources by the universities in Nigeria. The University of Ibadan official bulletin special release (2006) reported that the following electronic resources; AGORA, HINARI, LANTEEL, EBSCOHOST, EGRANARY and DIGITAL LIBRARY, are available in Kenneth Dike Library. There are also on-line journal resources such as, HIGHWIRE, ARCHIVE, AFRICAN JOURNALS ON-LINE, POPLINE, BIOMED CENTRAL and others acquired through journal donation project. Also in 2000, the university of Calabar library acquired about 16 computer systems and subscribed to a number of on-line databases such as AGORA, HINARI and EBSCO for its users (Ani, 2007). The University of Port Harcourt equally subscribed to EBSCO and JSTOR in 2006 while they subscribed to AGORA and HINARI in 2007. The University of Port Harcourt does not offer Internet services in their library. However the members of the academic community were given institutional usernames and passwords. This enables them to have access to full text journal articles, databases and other resources or the Internet from the cyber cafes in the information communication centre on campus.

## **Conclusion**

Libraries acquisition of electronic resources afford users the opportunities of access to relevant and up-to-date information from different subject fields. They are also the link to the process of useful research and learning activities which can boast the socio-economic development in the continent. Information in the electronic resources is up-dated often and students are given the opportunity of multiple file searches which cannot be done with printed tools. Moreover, information collected from electronic resources by students can be printed out or saved to be retrieved later. Ray and Day (1998) stated that recalling information from electronic information sources are often faster than consulting print indexes, especially when searching retrospectively and they are straightforward when combination of key words are used. E-resources save the time that would otherwise have been used in searching through pages of printed tools. E-resources also contain large volumes of information which allow students to retrieve as many quality information as they desire. These electronic resources are gateways to other resources. This means users can retrieve information from around the world without difficulties or financial concerns.

Furthermore, electronic resources offer significant benefits to university libraries such as reducing the problem of inadequate space and mutilation of books. Giving credence to this view, Norris (2004) asserted that electronic resources reduce pressure on academic libraries for physical space for storage of books and journals, gives the librarian the assurance that the electronic books and journals are complete, un-vandalized and in the right place and provides unlimited access to users. Electronic resources encourage interlibrary loans and gives fast and easy link to other libraries. Through electronic resources, university students are given access to current materials and educational information for learning and research.

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# **Computer Skills as Predictors of Lecturers' Use of Scholarly Electronic Publications for Research in Federal University Libraries in Nigeria**

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## **Introduction**

The development in information and communication technologies (ICTs) such as computers, Internet and scholarly electronic publications (e-journals) have made it almost unnecessary for lecturers to use card catalogues, printed abstracts and indexes, bibliographies, textbooks, printed journals and so on. Today, university lecturers all over the world can conduct research, teach and accomplish other academic tasks by using computers connected to the Internet to search and retrieve needed information from electronic catalogues, e-journals and large databases of digitized scholarly information (Marcum & George, 2003). Consequent upon the change from paper to electronic format, lecturers are expected to develop computer skills required to exploit information in scholarly electronic publications.

Scholarly publications are the primary means by which the outcome of academic work is shared. Journal articles, books, conference proceedings, and the likes have been the primary delivery vehicles for scholarly work. Electronic forms of scholarly publications abound and are on the increase. Tenopir and King (2001) noted that "nearly two-thirds of all scientific journals are available both electronically and in print and there are more than 1, 000 electronic-only peer-reviewed journals". Lecturers use varied forms of scholarly electronic publications in formal and informal settings to communicate with one another in the same discipline as well as with others beyond their disciplines and institution (Teferra, 2003).

Research indicates that there are cognitive and technical factors that do affect ICT use by scholars. The possession and use of technical skills such as computer skills is a focus of this study. Computer skill may be a factor that influences lecturers' utilization of scholarly electronic publications for research purpose. Information and communication technologies have resulted in a need for the learning of new skills, abilities, and capabilities/competences to effectively and efficiently handle job related tasks in electronic environment. Knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organizations ( Zin, Zaman, Judi, Mukti, Amin, Sahran, Ahmad, Ayob, Abdulla, & Abdullah, 2000:1). For instance a study of faculty's use of electronic resources found that use was influenced by such factors as computing skills of academic (Waldman, 2003).

## **Statement of the Problem**

Over the last few years, enormous progress has been made in ensuring that lecturers in federal university in Nigeria could access the expanding volume of scholarly publications produced in electronic format. Support has been provided in acquisition of relevant hardware and software and setting up the necessary networked infrastructure. Negotiation with publishers has resulted in scholarly electronic publications been made available free or at heavily discounted prices through programmes like AGORA, HINARI, EBSCHOST, JSTOR, and PERI.

However, the development seems to pose serious challenges to maximum beneficial use of scholarly electronic publications in an emerging nation like Nigeria. Experts had observed that the use of scholarly electronic publications by lecturers is low in federal universities in Nigeria. The problem may not just be that of inaccessibility but other factors like computer skills may be accountable for low use. Consequently, this study investigated computer skills as predictors of lecturers' utilization of scholarly electronic publications in federal universities in Nigeria.

## **Objectives of the Study**

The objectives of this study are to: determine the computer skills possessed by lecturers, investigate the level of lecturers' utilization of scholar electronic publications that are available in federal university libraries in Nigeria and find out whether there is a relationship between computer skills and lecturers' utilization of scholar electronic publications.

## **Research Questions**

The following research questions guided the study:

- (i) what are the computer skills possessed by lecturers in federal universities in Nigeria?
- (ii) to what extent do lecturers in federal universities in Nigeria utilize scholarly electronic publications?

## **Hypothesis**

The null hypothesis that was tested at 0.05 level of significance in the study is - there is no significant relationship between computer skills and utilization of scholarly electronic publications by lecturers in federal universities in Nigeria.

## **Literature Review**

Research entails the following: free inquiry, painstaking search for the truth no matter where it leads, un-filtered intellectual engagement aimed at expanding the frontier of knowledge, unbiased recording and interpretation of events with a view to unveiling new facts or trends and knowledge mining of systems in the universe (Falase, 2005). Research according to Landau, Ramson, Schwartz, Davidson, Seaton, and Tebbit (1990) is a "careful search": "systematic investigation towards increasing the sum of knowledge." Research is conducted in order to create awareness and to contribute to the body of knowledge in the particular field of study. It seeks to understand given situations like natural or social

phenomena through observation or experimentation and to explain them for the benefit of mankind.

According to Olayinka, Agbaje, Alonge, Ekpenyong, Gbadegesin, Isiugo-Abanihe, Oriaku, Raji-Oyelade, and Taiwo (2004) the process involved in conducting a research, will among others typically include the following: adequate design and conceptual framework: adequate knowledge of work carried out by other workers on the same topic: competence in the execution: data collection may involve bench work: use of questionnaires (instruments) clinical test, etc: analysis of data follows and this may require computer modeling, use of commercial available software package, statistical analysis, etc and interpretation of the result. Complementing the above research process is documentation, also referred to as production of report or writing research report (Tuckman, 1999). The report helps to disseminate knowledge, creates awareness and use of idea and ensures preservation of knowledge for further research.

### **Research and Use of Scholarly Publications**

The broad purpose of conducting research is to add to human store of knowledge. The value of good scientific research lies in the knowledge gained. Science is a public endeavour and the value of research is very limited if only the researcher is aware of the research effort and the results obtained. Others must know it so dissemination of the knowledge is a vital part of the research process (Furlong, Lovelace & Lovelace 2000). The results of any systematic investigation carried out by researchers would have to be communicated to some intended audience in order to be of much value. The final step after conducting a research project entails production of report to facilitate its communication potentialities. The channels of disseminating research report may be in the form of a thesis, monograph or an article in journal (Olayinka, et al. 2004). Corroborating the above assertion CARL (2005) opined "The publication of research in journals, monographs and technical reports continues to be a major channel for the dissemination of research results." Research analysis in all scientific fields is communicated through a complex network of journals, databases and publishers. These networks not only communicate but they also make knowledge legitimate by placing it in accepted formats and permitting wide access to it (Altbach 1994). Research findings are communicated through the respected journals in the various disciplines. These research journals (Learned journals, academic journals, refereed/ peer -reviewed journals) constitute the basic building blocks of the field, though information and communication technologies is currently transforming the knowledge dissemination system and by implication the research journals. Scholarly journals are the main means of communicating knowledge in virtually all academic fields and thus are central to the scholarly communication (scholarly publishing) system (Altbach 1994).

Several studies such as Abels, Liebscher and Denman (1996), Ehikhamenor (2003a) and (2003b); Tenopir (2003); Peansupapa and Walker (2005); and Popoola(2008) have shown the relationship between research and utilization of scholarly electronic publications. Popoola (2008) in a study of the use of information sources and services and its effect on the research output of social scientist in Nigerian universities found that the use of information sources or services will improve the research output of the respondents (social scientists in Nigerian universities) and if information's resources and services available in their institutional information system or elsewhere are used their research output is more significantly enhanced. In the same study Popoola (2008) found that electronic information resources services such as Internet, E-mail and CD-ROM search were not popular among social scientist. This does not imply that social scientists do not use electronic information

resources but when compared to other information resources available to them their rate of use of electronic information resources was low.

### **Scholarly Publications and Lecturer Productivity**

Scholarly electronic journals provide improve accessibility to the processes and outcomes of scholarly research. Studies have demonstrated the correlation between SEP and researchers' productivity especially in collaborative research among lecturers in universities. Hagstom as cited in Ehikhamenor (2003:108) found that "there was a correlation between productivity and the rate of joint authorship." Also it has been observed by Meadow as cited by Ethikamenor (2003: 108) that "the number of contacts a scientist had with colleagues on a regular basis was related to the extent to which he carried out his research tasks in collaboration with others". Still in another study by Crawford (1992) to find if there is a correlation between creativity and connectedness he found that 97%(86/89) of those who responded to the survey felt they were better informed because they were connected, 66% (60/91) felt being connected made them more productive and 62%(55/89) felt they were more creative because they were connected. In their study Dobrov and Kocherovets (1979) found that the productivity of scientist depended on all the number and frequency of contacts with colleagues and time spent on such contacts. On the Nigerian scene, Ehikhamenor (1990) found that having contacts, especially overseas was absolutely necessary for obtaining scientific information in the prevailing circumstances of information crisis. Recent studies have discovered that computer mediated and the use of electronic journals is positively associated with scientific productivity and collaboration and other predictors of task achievement (Griffiths & King, 1993; and Walsh et al, 2000).

In a study of oceanographers, Hesse, Sproull and Walsh as cited in Covi (2000) found a strong relationship between positive scientific outcomes (publication, profession recognition and oceanographers known) and the use of the SCIENCE net electronic communication service by junior scientists and oceanographers that were geographically distant from instruments, data and research colleagues (p.1284). Scholarly electronic publications offer more feature to enhance lecturers' productivity. Many studies such as those of (Wells 1998/1999; Miller, 2002; and Stranack 2006) have identified hyperlink, sound, video and multimedia as additional features provided by electronic publications to improve lecturers' productivity.

### **Computer Skills and Use of Scholarly Electronic Publications**

Cromber, Colley, Hargreaves, and Dorn (1997) noted that in recent years rapid developments in information technology (IT) have made a considerable impact on every aspect of society such that a working familiarity with IT is becoming increasingly important especially in the workplace. Supporting the above view Zin et al (2000:1) observed "knowledge, skill and competence with computer technology are now an asset for those entering the competitive employment market. Every aspect of life from education, leisure and work environment to social interaction is being influenced by computer technology" The information user's (lecturer's) competence in deploying ICT to achieve his/her job related tasks (research) could not be overemphasized. Hence, searching for information in scholarly electronic publications has become "inexorably linked to computer technology" (Jacobson as cited in Waldman 2003) literacy.

The concept computer skill is synonymous with digital literacy, ICT fluency, ICT literacy, technological and e-literacy and 21<sup>st</sup> century skills (Markauskaite 2006). In this study the above terms are used interchangeably because the terms involve the application of modern

computer in lecturers' daily lives. Gilter (1997) defined digital literacy as "... the ability to understand and use information in multiple format from a wide range of source when it is presented via computer". Complementing the above definition Utsi and Lowyck (2005) said digital literacy is a baseline set of skills for successfully coping with a complex, often technological world, holding multiple media messages". Computer literacy skills according to McCartan in Selwyn (1997) are "the ability to use the computer as a multipurpose tool appropriately". Malpiedi (1989) proposed that computer literacy could be considered to mean possessing the understanding and skills necessary to live in a society that depends upon computer technology and skills necessary to live in a society that depends upon computer technology. With the increase in access to the Internet, definitions of computer literacy skills have expanded to include the ability to use e-mail, graphical interfaces such as Netscape, online publishing and the ability to evaluate the content of online materials (Corl, 1996).

### **Assessing Computer Literacy**

The use of computer for the creation of knowledge has been extensively researched in the past (Mitra 1998; Fracis & Katz 1996; and Geissler & Horidge 1993). Different experts use different areas to assess computer literacy skill in accordance with technological progress in IT as microcomputer and application software used become more user friendly in addition to the advancement in electronic communication (Zin et al, 2000:2)

To meet the ever increasing need of computer literacy several studies have been conducted on various areas of computer use. Zin et al (2000) in their study on gender differences in computer literacy level among undergraduate found that males had greatest computer experience than females and there was significantly greater use of some software and application by males than females.

Although males had a higher computer literacy level than females factors such as experience and computer ownership also affect the computer literacy level (Zin et al, 2000:6) to increase students' computer literacy level, Zin et al suggested offering more suitable computer courses or by introducing computer subjects earlier in our educational system and students should be encouraged to acquire a personal computer in line with the above suggestion. Ashcroft and Watts (2004) noted "it is vital for those in management positions to recognize the imperative of continuing professional development (CPD) and ensure that staff are proactive in maintaining up-to-date levels of expertise (in ICT)." Also Steinmueller (2001) suggested that many ICT users are self taught and are capable of developing and understanding of ICT through the experience of utilizing them. If this is the case, then countries that are unable to provide extensive access to ICT are inevitably marginalized as they are less likely to produce capable self taught person. Corroborating Steinmueller's suggestion Ashroft and Watts (2004) in a study on ICT skills for information professionals in Nigeria found that staffs are however encouraged to undertake training on their own. The authors concluded greater take up of free trials of resources would allow for experimentation and self-teaching of ICT skills.

While the gender gap relating to computer use seems to be shrinking, several studies have found that there is a gender gap when considering use of Internet and that gender is a major predictor Internet use and attitudes: males seem to enjoy browsing on the Internet for enjoyment while females tend to only use it for work-related purpose (Ford and Miller, 1996:188). Ford, Miller and Moss (2001:1061) in a study found that "females tended to experience more difficulty finding information on-line, to feel less competent and comfortable using the Internet, to use the Internet less frequently than males and to make

use of less varied set of Internet application." Majid and Abazora in Waldman (2003) found a similar result in studying faculty members; while males tended to have better computing skills than females, age and years of obtaining highest educational qualifications were also important factors in establishing computer skills.

A study of faculty's use of electronic resources found that it was influenced by such factors as computing skills of academic, their age and gender (Majid & Abazova in Waldman (2003). They found an especially significant relationship between computing skills and use of electronic resources in the library including the online public access computer or OPAC the library's online catalogue. Faculties with higher computing skill were not only more likely to use and be familiar with their library's electronic resources including the OPAC but also tended to use the Internet more frequently.

## **Methodology**

The research design that was used for this study is the *ex-post-facto* type of descriptive research. The purpose of descriptive research is to describe the current state of affairs at the time of the study and the linear relationship between two or more variables without any hint of attributing the effect of one variable on another (Salkind, 2006). This research design is considered appropriate for the study because the purpose of the study is to identify and understand the relationship that exists between the independent variable (computer skills) and the dependent variable (utilization of scholarly electronic publications).

The population for this study is six thousand one hundred and eighty six (6186) lecturers in six (6) selected federal universities in Nigeria (National Universities Commission, 2008). The universities are: Ahmadu Bello University, Zaria; Bayero University, Kano; Obafemi Awolowo University, Ile-Ife; University of Ibadan, Ibadan; University of Jos, Jos and University of Port Harcourt, Port Harcourt.

A multi-stage sampling technique was adopted in this study. This is considered adequate because the multistage sampling eliminates the need for a complete list of all units in the population – sample frame, reduces cost, simplifies fieldwork and saves time.

Six (6) universities were purposively selected from twenty-seven (27) federal universities in Nigeria. The six universities were selected based on the availability of Internet access to scholarly electronic publications in the university libraries. The universities are; Ahmadu Bello University, Zaria, Bayero University, Kano, Obafemi Awolowo University, Ile-Ife, University of Ibadan, Ibadan, University of Jos, Jos, and University of Port Harcourt, Port Harcourt.

Four (4) faculties were randomly selected from each university. The faculties are: Education, Arts/Humanity; Social sciences and Sciences. The faculties are common to all federal universities in Nigeria.

The proportionate sampling technique was employed to select a sample size of 2,004 participants (lecturers) from the six (6) universities. A sampling fraction of 32.5% was used to select respondents from each university. Using the quota sampling based on specified proportion, respondents were selected from each of the four faculties in the six universities. The accidental (availability) sampling was employed to select each unit of respondent from the quota allotted to each of the four faculties in the selected universities. Table 1 shows the selected universities, faculties and sample population.

Table 1: Universities and sample population

FACULTY	UNIVERSITIES						TOTAL
	ABU	BUK	OAU	UI	UNI JOS	UNI PORT	
EDUCATION	122	47	88	95	65	84	501
ARTS	122	47	88	95	65	84	501
SOCIAL SCIENCES	122	47	88	95	65	84	501
SCIENCES	122	47	88	95	65	84	501
TOTAL	488	188	352	380	260	336	2004

Consequently, a sample of 2,004 was selected for the study. The figure represents approximately 32.4% of the population of lecturers in federal universities in Nigeria. The sample is regarded as adequate based on Seaberg (1988:254) and Grinnell and Williams (1990:127) who suggested, "In most cases a 10% sample should be sufficient for controlling for sampling error."

### Research Instruments

Two sets of questionnaire were used for the study. The first questionnaire is tagged computer skills assessment scale (CSAS). It is divided into two sections. Section A collects respondent's personal information such as name of university, faculty, academic status and gender. Section B measures computer skills of the respondents such as ability to word process, send and receive e-mail and browse the Internet.

The second questionnaire is labeled utilization of scholarly electronic publications assessment scale (UTSEPAS). It is made up of two sections. Section A is about the respondent's bio-data. Section B seeks to know the frequency of utilizing scholarly electronic publications among respondents.

### Validity and Reliability of Instruments

The questionnaires were given to experts in the Department of Library, Archival and Information Studies for their judgment to establish content validity. The reliability of the questionnaires was assessed using the Pearson correlation coefficient. The test-retest reliability was employed using 30 lecturers at the University of Benin, Benin. The reliability coefficient of each of the two questionnaires is: Computer skills  $r=0.95$ , and Utilization  $r=0.96$ .

### Data Analysis

Data generated were analyzed using descriptive and inferential statistics like simple percent, mean and the Pearson's-r.

### Results

A total of 2004 copies of questionnaire were distributed and 1403 (70%) were returned (Table 2). The response rate (70%) is considered adequate for the study because the standard and acceptable response rate for most studies is 60% (Malaney, 2002, Evans, Peterson and Demark-Wahnefried, 2004, as cited in Dulle, Minish-Majanja & Cloete, 2010).

Table 2: Questionnaire distributed and response rate

University	No. Of copies distributed	No. Of copies returned	Response rate (%)
ABU	488	298	14.87
BUK	188	141	7.03
OAU	352	306	15.27
UI	380	217	10.83
UNI JOS	260	201	10.03
UNI PORT	336	240	11.97
Total	2004	1403	70

## Demographics

The faculties of respondents are shown in Table 3. Majority of the respondents in the study were in the faculties of education, arts, and science. The Table shows that the faculty of education 455(32.4%), arts 370(26.4%), sciences 356(25.4%) while social sciences 222(15.8%).

Table 3: Distribution of respondents by faculty

Faculty	Frequency	Percentage
Education	455	32.4
Arts	370	26.4
Sciences	356	25.4
Social Sciences	222	15.8
Total	1403	100

The academic status of the respondents is shown in Table 4. The result shows that majority of the respondents are graduate assistants, assistant lecturers, lecturer II, lecturer I and senior lecturers.

Table 4: Academic Status of the respondents

Academic Status	Frequency	Percentage
Graduate Assistant	309	22.0
Assistant Lecturer	261	18.6
Lecturer II	249	17.7
Lecturer I	229	16.3
Senior Lecturer	258	18.4
Reader/Associate Professor	60	4.3
Professor	37	2.6
Total	1403	100

However, few associate professors and professors were involved in the study (Table 4). Graduate assistant 309(22.0%), assistant lecturer 261(18.6%), lecturer II, 249(17.7%), lecturer I, 229(16.3%), senior lecturer 258(18.4%), associate professor 60(4.3%) and professor 37(2.6%).

The gender of respondents is as shown in Table 5. There are more male than female lecturers were involved in the study. While male were 938 (66.9%), female constituted 465 (33.1%).

Table 5: Gender of respondents

Gender	Frequency	Percentage
Male	938	66.9
Female	465	33.1
Total	1403	100

## Research Questions

Answers to the research questions formulated to guide the study are reported in this section.

Research question 1: What are the computer skills possessed by lecturers in federal universities in Nigeria?

To determine the computer skills of lecturers they were requested to respond to some statements about their ability to use computer in the internet environment. Their responses are presented in Table 6.

Table 6: Computer skills of lecturers in federal universities in Nigeria

Word processing skills							
S/N	Statements	SD	D	A	SA	Mean	S.D.
1	I can use input devices like mouse/arrow key	38 2.7%	58 4.1%	390 27.8%	917 65.4%	3.56	.702
2	I can turn the computer, monitor, and printer on or off	62 4.4%	29 2.1%	411 29.3%	901 64.2%	3.53	.746
3	I can save a file to a flash or to specific location on the local or network environment	30 2.1%	59 4.2%	449 32.0%	865 61.7%	3.53	.680
4	I can print a document from the computer	38 2.7%	85 6.1%	396 28.2%	884 63.0%	3.52	.731
Internet skills							
S/N	Statements	SD	D	A	SA	Mean	S.D.
1	I can send, receive, print or save e-mail messages	63 4.5%	66 4.7%	428 30.5%	846 60.3%	3.47	.783
2	I can navigate the internet/www using functional keys like back, forward, reload, stop, refresh, go home, etc	59 4.2%	86 6.1%	419 29.9%	839 59.8%	3.45	.789
3	I can launch any of the web browsers	92 6.6%	96 6.8%	436 31.1%	779 55.5%	3.36	.872

The result shows that lecturers in this study possessed computer skills such as word processing and Internet skills (Table 6). I can use input devices ( $c=3.56$ ;  $SD=3.53$ ). I can save to a file, flash or other location on the local or network environment ( $c=3.53$ ;  $SD=.74$ ), and I can print a document from the computer ( $c=3.52$ ;  $SD=.73$ ). Other computer

skills possessed by the lecturers are: I can send, receive, or save e-mail message ( $c=3.47$ ;  $SD=.783$ ), I can navigate the internet using functional keys like back, forward, refresh, etc ( $c=3.45$ ;  $SD=.789$ ) and I can launch any of the web browsers ( $c=3.36$ ;  $SD=.872$ ).

Research question 2: To what extents do lecturers in federal universities utilize scholarly electronic publications?

To determine the extent of utilization of scholarly electronic publications by lecturers, they were made to indicate the frequency of utilization of scholarly electronic publications available to their university libraries. Lecturers' responses are presented in Table 7.

Table 7: Level of utilization of scholarly electronic publications available in federal university libraries by lecturers

S/N	Statements	Never	Occasionally	Often	Very often	Mean	S.D.
1	JSTOR	790 56.3%	243 17.3%	154 11.0%	216 15.4%	1.85	1.126
2	Encyclopedia Online	723 51.5%	325 23.2%	234 16.7%	121 8.6%	1.82	.998
3	Library Website	880 62.7%	212 15.1%	177 12.6%	134 9.6%	1.69	1.020
4	GLOBAL DEVELOPMENT NETWOTH-JOURNAL SERVICE	850 60.6%	276 19.7%	157 11.2%	120 8.6%	1.68	.978
5	AJOL	839 59.8%	297 20.8%	173 12.3%	99 7.1%	1.67	.945
6	ELSEVIER: Science Digest	843 60.1%	281 20.0%	190 13.5%	89 6.3%	1.66	.936
7	AGORA	839 59.8%	297 21.2%	182 13.0%	85 6.1%	1.65	.922
8	E-JOURNAL.ORG	849 60.5%	279 19.9%	214 15.3%	61 4.3%	1.63	.894
9	DOAJ	912 65.0%	244 17.4%	164 11.7%	83 5.9%	1.59	.912
10	ACM DIGITAL LIBRARY	884 63.0%	284 20.2%	178 12.7%	57 4.1%	1.58	.861
11	ISI Web of science	948 67.6%	195 13.9%	168 12.0%	92 6.6%	1.58	.937
12	MCB: Emerald Library	935 66.6%	227 16.2%	141 10.0%	100 7.1%	1.58	.935
13	HINARI	948 67.6%	204 14.5%	133 9.5%	78 5.6%	1.55	.901
14	SAGE	940 67.0%	230 16.4%	161 11.5%	72 5.1%	1.55	.886
15	ACS PUBLICATION	909 64.8%	281 20.0%	156 11.1%	57 4.1%	1.54	.845
16	Ebrary	924 65.9%	252 18.0%	179 12.8%	48 3.4%	1.54	.842
17	EBSCOHOST	950 67.7%	223 15.9%	162 11.5%	68 4.8%	1.54	.878

18	SCIENCE	959 68.4%	196 14.0%	183 13.0%	65 4.6%	1.54	.888
19	ERIC	953 67.9%	231 16.5%	150 10.7%	69 4.9%	1.53	.871
20	PCT	969 69.1%	215 15.3%	124 8.8%	95 6.8%	1.53	.912
21	REPEC: RESEARCH PAPERS IN ECONOMICS	956 68.1%	217 15.5%	163 11.6%	67 4.8%	1.53	.877
22	BIOMED CENTRAL	949 67.6%	250 17.8%	137 9.8%	67 4.8%	1.52	.856
23	BMJ PUBLISHING GROUP	955 68.1%	239 17.0%	143 10.2%	66 4.7% <sup>1</sup>	1.52	.858
24	ABC CLIO	926 66.0%	291 20.7%	128 9.1%	58 4.1%	1.51	.825
25	American mathematical society	967 68.9%	243 17.3%	125 8.9%	68 4.8%	1.50	.848
26	HMP	988 70.4% <sup>9</sup>	204 14.5%	133 9.5%	78 5.6%	1.50	.880
27	ABI INFORM	933 66.5%	295 21.0%	137 9.8%	38 2.7%	1.49	.780
28	CHEMLIST	984 70.1%	201 14.3%	169 12.0%	49 3.5%	1.49	.837
29	Helecon	988 70.4%	217 15.5%	130 9.3%	68 4.8%	1.49	.852
30	OARE	1000 71.3%	200 14.3%	117 8.3%	86 6.1%	1.49	.886
31	Pop line	985 70.2%	220 15.7%	124 8.8%	74 5.3%	1.49	.862
32	PROQUEST DIRECT	992 70.7%	204 14.5%	134 9.6%	73 5.2%	1.49	.868
33	EEBO	995 70.9%	201 14.3%	162 11.5%	45 3.2%	1.47	.820
34	HIGHWIRE ARCHIVE	1004 71.6%	199 14.2%	139 9.9%	61 4.3%	1.47	.842
35	QUESTIA	991 70.6%	216 15.4%	142 10.1%	54 3.8%	1.47	.826
36	AMICO	994 70.8%	221 15.8%	136 9.7%	52 3.7%	1.46	.816
37	Zentralblatt math	1020 72.7%	215 15.3%	122 8.7%	46 3.3%	1.43	.785
38	Silver platter	1015 72.3%	213 15.2%	142 10.1%	33 2.4%	1.42	.767
39	SOURCE OECD	1034 73.7%	208 14.8%	129 9.2%	32 2.3%	1.40	.749

The result in Table 7 shows that lecturers' utilization of scholarly electronic publications available in federal universities libraries is low. The table shows that the proportion of respondents who never used scholarly electronic publications in the library range from 790(56.3%) to 1034(73.7%), while very frequently ranges from 32(2.3%) to 216(15.4%). Therefore, the utilization level by lecturers is very low.

Respondents (Lecturers) were asked to indicate the time (hours) spent each time they utilize scholarly electronic publications in the library. Their responses are shown in Table 8 below.

Table 8: Time spent using scholarly electronic publications

S/N	Items	Frequency	Percent
1	< 1 hr	311	22.2
2	1 hr	415	29.6
3	2 hrs	303	21.6
4	3 hrs	257	18.3
5	4 hrs	79	5.6
6	5 hrs	38	2.7
	Total	1403	100.0

In Table 8 it could be seen that 311(22.2%) lecturers spent less than 1 hr, 415 (29.6%) spent 1 hr, 303(21.6%) 2hrs, 257(18.3%) 3 hrs, 79(5.6%) 4 hrs while 38(2.7%) 5 hrs. The results had shown that most lecturers' spent 1 hr each time they utilized scholarly electronic publications available in the library while few lecturers spent 5 hrs.

The respondents were requested to indicate the research activities for which they use scholarly electronic publications. Their responses are shown in Table 9.

Table 9: Research activities for utilizing scholarly electronic publications/databases

S/N	Items	No	Yes	Mean	S.D
1	Search for relevant literature	342 24.4%	1060 75.6%	.76	.430
2	Publish article, books	478 34.1%	925 65.9%	.66	.474
3	Identification of research topic, ideas	531 37.8%	872 62.2%	.62	.485
4	Report writing such as article	670 47.8%	733 52.2%	.52	.500
5	Bibliographic citation, referencing	728 51.9%	675 48.1%	.48	.500
6	Collaboration with colleagues	821 58.5%	582 41.5%	.41	.493

The results in Table 9 shows that 1060 (76.6%) of the respondents said Yes to "Search for relevant literature" while 343(24.4%) said no. This also ranked highest with (mean= .76; SD= .430). Publish articles and books 925(65.9%) said yes while 478(34.1%) said no. And ranked second (mean = .66, SD=.474). Identification of research topic came third with 872(62.2%) yes and 531(37.8%) no. This shows that the respondents use scholarly electronic publications to search for relevant literatures, publish articles and books and identification of research topics. However, the respondents did not seem to use SEP for bibliographic citation and referencing, and collaboration with colleagues.

### Testing Hypothesis

This section of the research reports the results of the testing of null hypotheses formulated to guide the study. The hypotheses were tested at 0.05 level of significance. The result is presented below.

Hypothesis: There is no significance relationship between computer skills and utilization of scholarly electronic publications by lecturers in federal universities in Nigeria.

To establish the relationship between computer skills and utilization of scholarly electronic publications, the scores of computer skills of lecturers were correlated with the frequency of utilization of scholarly electronic publication and the result is shown in Table 10.

Table 10: Correlation of computer skills and utilization of SEP by lecturers

Variable	Mean	Std. Dev.	N	R	P	Remark
Utilization of Scholarly Electronic Publications	60.4312	24.7540	1403	-.187**	.000	Sig.
Computer Skills	27.7306	05.0238				

Table 10 shows that there is a negative significant relationship between utilization of scholarly electronic publications and computer skills of lecturers in federal universities in Nigeria ( $r = -.187^{**}$ ,  $N = 1403$ ,  $P < 0.01$ ). The correlation is significant hence, the null hypothesis is rejected. Therefore, there is a significant relationship between computer skills and utilization of scholarly electronic publications by lecturers in federal university in Nigeria. This implies that as the computer skills of lecturers increase their utilization of scholarly electronic publications made available in federal universities libraries decreases.

## Discussion

This section reports the findings of the study and discusses them in line with findings from previous studies.

### Computer skills

The study had established that lecturers in this study possessed adequate computer skills like word processing and conduct internet search such as browse, receive and send e-mail. This findings corroborates Agbonlahor (2005) who found that "computer applications used by academics in Nigerian universities were word processing, e-mail and web-browsing." The situation may be accounted for by the fact that lecturers in federal universities in Nigeria are compliant with modern use of ICT in research communication. Also the finding supports Safahieh and Asemi (2008) who found that "the ability of operating computer systems to perform personal, job related tasks, use web browsers and searching on the internet to retrieve information and communicating with others by sending and receiving e-mail has become essential part of every ones skills."

### Use of scholarly electronic publications

The result of the analysis on utilization of scholarly electronic publications showed that there was low level of utilization of scholarly electronic publications in federal university libraries among majority of lecturers. This means that most lecturers do not visit the libraries to utilize the available e-journals. In other words very few lecturers visit the library to utilize the electronic databases such as JSTOR, AGORA, HINARI, EBSCOHOST and DOAJ. This finding agrees with Olalude (2007), Gill and Dangarno (2008), Ibrahim (2004) and Ajuwon (2003) who found that access to and use of electronic resources is low in academic libraries. One of the explanations responsible for the situation could be according to the Congress of the United States, Office of Technology Assessment, (1997) "the general acceptance and use of a new technology usually lags considerably behind its availability. Estimate for the

average time lag are from 10-15 years but wide variation occurs." The traditional practice of using print journals may still be with the lecturers hence, low utilization of scholarly electronic publications.

Also with advent of private Internet service providers (ISP) such as MTN, Visafone, Glo and Starcom, some lecturers now subscribe to personal Internet connectivity and this may have prevented them from visiting the libraries to consult electronic journals. Still another reason is the development of open access engines. Hence, general-purpose search engines, designed to locate any resource on the Internet are often the starting point for many readers (lecturers) when trying to locate scholarly works (Jones, 2007). The situation may be as a result of high academic workload and administrative responsibilities of the lecturers. According to Hancock et al (1992) respondents viewed administrative, committee, and teaching duties as a primary impediments to research productivity.

### **Relationship between computer skills and utilization of scholarly electronic publications in university libraries**

The test of significance of relationship between computer skills and utilization has shown that there was a negative significant relationship between computer skills of lecturers and utilization of scholarly electronic publications in federal university libraries. This implies that as computer skills improve utilization of scholarly electronic publications in the libraries will decrease. In other words computer skills are predictors of utilization of e-journals. This finding agrees with Majid and Abazova (1999) as cited in Waldman (2003) who in a study of faculty's use of electronic resources found "an especially significant relationship between computing skills and use of electronic resources in the library." The variance in this situation may be as a result of lecturers' subscription to Internet connection and as such do not need to visit the libraries buildings to use e-journals.

### **Conclusions**

This study provided empirical data on computer skills and lecturers' utilization of scholarly electronic publications in federal university libraries in Nigeria. Lecturers in federal university libraries have adequate computer skills required to exploit scholarly electronic publications and that computer skills are predictors of lecturers' utilization of scholarly electronic publications in federal university libraries in Nigeria

### **Recommendations**

In view of the findings of the study, the researcher wishes to recommend the following:

1. There is need for training and re-training of lecturers through seminars, workshops, conferences, and user education on the use of scholarly electronic publications. This will complement and supplement lecturers' computer skills and internet search skills.
2. Librarians and other IT staff in the libraries should be encouraged to teach lecturers by sending them to international and national conferences, seminars, and workshops on the applications of scholarly electronic publications and internet skills.
3. Promotion of scholarly electronic publications use should be done by the university libraries. This involves creating awareness, promotion and advertisement of e-journals services to the lecturers.

## Contribution of the study to knowledge

This study has contributed to knowledge in the following ways:

- i. The study has established that, there was low level of utilization of scholarly electronic publications among lecturers in the federal universities libraries in Nigeria. And that effort should be made by the universities together with their library management teams to enhance utilization of scholarly electronic publications to justify the huge sums of funds expended on the library e-journals project.
- ii. The study also revealed that computer skills are the factors that influenced utilization of scholarly electronic publications in federal universities in Nigeria.

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## **The Challenges of Preservation of Archives and Records in the Electronic Age**

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### **Introduction**

*Archives* are collection of historical records as well as the place they are located. Archives, unlike books are unique documents and records. The information they contain are often primary source information that may have been accumulated over the course of an individual's or organization's lifetime as the only evidence of event. Their physical format, order and nature also provide important evidence of the condition and period they were created and used. They are records that have been selected for permanent or long term

preservation because of their enduring cultural, historical and evidentiary value. The study and practice of organizing, preserving, and providing access to information and materials on archives is called *archival science* or archivy.

*Records* are information created, received, and maintained as evidence by individuals or organizations in pursuance of legal obligations or in the transaction of business (Wikipedia, 2010). They are "recorded information produced or received in the initiation, conduct or completion of institutional or individual activity and which comprises content, context, and structure sufficient to provide evidence of the activity" (ISO, 2001). The long treks of records into archives are all attempt to preserve and conserve them because of their enduring value.

The US National Archives and Records Administration (NARA) developed the concept of the records life cycle to model how the function, uses and responsibility for records change as records get old and move from the control of the creator to the physical custody of the archivists. The life cycle or the journey of records to archives passes through three stages –

*The current/active stage.* In the first phase of this model called primary use, the documents or records are newly produced or procured and are highly demanded by administrators, managers, and individuals;

*The semi- current/semi-active stage.* As records get old they gradually become less heavily referenced and finally become inactive. This is a stage when the frequency of their demand has reduced or died. At this stage of the model, record managers, and or archivists schedule how the records are arranged for systematic elimination or permanent retention or transfer to the archives.

And *the non current/inactive stages*, a stage when they are no longer being demanded. At this period these documents are appraised and if they are adjudged worthy of permanent preservation, they are transferred to the archives. When they enter the archives, they are physically and intellectually integrated to ensure preservation. These heritage materials are jealously preserved because they are rare, special, may have only a copy, and cannot be sold in the market or purchased from vendors or inside bookshops. Therefore, keeping the original materials in good condition is an important aspect of the work of professional librarians, archivists and records managers.

Preservation and conservation are two related concepts that are used interchangeably by people outside the library, archives and records profession. Though they have the same objectives to achieve, they are two related variables. *Preservation* is a branch of library and information science that is concerned with maintaining and restoring continued access to records and archives collections. It is the study, diagnosis, treatment and prevention of deterioration, decay and damage to those collections in cultural heritage institutions. *Conservation* on the other hand is the treatment and repair of individual items in the collection in order to slow their decay and damage and to restore them to a usable state. It is the actual repair of the collections. Nevertheless, items that are given full range of treatments, or minor repairs are "those that are in frequent use; of great cultural significance; required for exhibition; in such an unstable condition that may deteriorate in storage or damage other archival materials ([www.jerseyheritage.org](http://www.jerseyheritage.org) ).

## **Justifications/Aims of Preservation**

The aims of preservation are to increase the longevity of active materials through careful storage and use. Preservation and conservation is necessary because there is usually lack of funds and time to give individual attention to the treatment of documents. Poor storage can encourage mould, insects, rodents, structural defects and aging of archives and records.

While we are still able to read some written heritage preserved from several thousand years ago, the digital information created merely a decade ago is in serious danger of being lost to posterity and thereby create a digital dark age. The US Library of Congress (2003) reported that 44% of the websites available on the internet in 1998 had vanished after one year and has created a stumbling block for preserving digital information.

Through digitization and reformatting, preservation librarians are able to retain materials while at the same time adapting to new methods. In these way libraries, archives and records managers can adapt to changes in users' needs without changing the quality of the materials. Through preservation efforts, patrons are rest assured that although materials are constantly deteriorating over time, the library itself will remain a stable, reliable environment for information needs.

## **Preservation and Conservation of Information Resources in the Pre-Electronic age**

Though, modern preservation and conservation as a formal profession in libraries, archives and records management dates back from the twentieth century, its philosophy and practice has its roots in many of the earliest tradition in the profession. For example, in many ancient societies, the approach was for the archivists or the librarians to appeal to "the heavenly protectors to preserve the books, scrolls, and manuscripts from insect, fire and decay" (Ritzenthaler, 1993). In the ancient Babylon (now Iraq), Hindu, Arabic and Eastern societies, their belief was that the gods and goddesses are the inventors of the alphabets, authors of knowledge, wisdom and writing, and the patron of the scribes, librarians, and archivists. Therefore, these gods were called upon to preserve the cultural artifacts.

Similarly, in some Christian monasteries, prayers and curses, called "book curse" were placed at the end of books to prevent theft, or to damn the thieves saying, "For him that stealeth a book from this library, may it change into a serpent in his hand and rend him. May he be struck with palsy, and all his members blasted. May bookworms gnaw his entrails ..." (Drogin, 1983). This level of preservation has been supplemented over the last century with the professional practice of preservation and conservation. Today preservation and conservation is more than maintaining and restoring of books, archives, and records in libraries. It includes theoretical, environmental, structural, technical, and electronic preservation strategies.

In library and information science, preservation is treated as an active and intentional process as opposed to the passive sense of preservation that was applied in the ancient days. Intentional preservation in libraries and archival institutions encompasses both remote and immediate approaches. The immediate approach may be regarded as conservation, while preservation is the remote plan.

## **Patterns of Preservation and Conservation**

Preservation librarians are those professionals in libraries, archives and records offices whose focus is on the management of preservation and conservation activities that seek to maintain steady access to content within books, manuscripts, archives, records, and other library resources. The routine activities carried out by such librarians include some of the standard functions of preservation and conservation programmes which entail:

**Collections care-** This refers to the general maintenance and preventive care of materials in an archival collection. This may include such activities as security, environmental monitoring, preservation surveys and more specialized activities like mass de-acidification.

**Conservation programme-** This refers to the treatment and repair of individual items to slow decay or to restore them to a usable state.

**Digital Preservation-** This is the maintenance of digitally stored information. This should not be confused with digitization which is a process of creating digital information which must in turn be digitally preserved. Refreshing, migration, replication and emulation are means of digital preservation.

**Disaster preparedness-** Disaster preparedness is the practice of arranging for the necessary resources and planning the best course of action to prevent and/or minimize damage to a collection in the event of a disaster of any level of magnitude, whether natural or man-made. One example is the installation of fire extinguisher in many strategic locations in our libraries and archives.

Reformatting refers to the practice of creating an object in another type of data storage device. This includes microfilming and digitization.

In this paper, intentional preservation and conservation methods are examined under two aspects namely, analogue or traditional methods and electronic/ digital preservation approaches. This is further discussed under two phases, the remote and the immediate preservation planning.

The remote preservation includes environmental preservation method, and structural preservation, while the immediate preservation techniques are technical preservation, and electronic / digital preservation.

### **Environmental Preservation**

Environmental controls are necessary to facilitate the preservation of organic library and archives materials. While environmental preservation is applied to conservation and preservation of archives and records, it is also necessary for digital preservation because digital materials requires good environment for it to operate well. Environmental preservation is of two aspects, the physical environment of the building itself and that of the materials. That of the building entails avoiding citing or locating a building that houses the library, archives and records in areas prone to flood disaster, water logged areas, military cantonments, industrial and commercial activities, earthquake and volcanic eruption. The physical environment of the materials include temperature, relative humidity, pest controls pollutants, light. Very high humidity encourages mold growth and insect infestations, and low humidity causes materials to lose their flexibility. Therefore, fluctuations in relative humidity are more damaging than constant humidity.

## **Structural Preservation Techniques**

This involves a way of selecting the type and quality of materials to be used in constructing libraries, archives and records after a good site have been identified. This requires that the structures/building should be:

Constructed with fire resistance materials; secured with iron windows and doors; equipped with steel shelves, smoke detective gadgets, security alarm system, portable fire extinguishers, and humidifier (air conditioners) and CCTV.

## **Technical Preservation/Conservation**

This approach concentrates on the physical materials collected in the library, archives and records buildings. It requires that deteriorating materials have to be maintained to extend its longevity. It includes routine dusting of archives and records and the shelves; giving first consideration to papers that are used to produce official documents; rebounding of deteriorating archival, records and library materials; de-acidification, encapsulation, photocopying and bounding are some of the processes involved in technical methods.

## **Archives and Records Management in the Electronic Age**

The general practice of records and archives management involves: planning the information needs of organization; identifying the information needed to be captured; creating, approving, and enforcing policies and practices regarding records and archives (their organization, appraisal, and disposal); developing a records storage plan which may include the short and long term housing of the physical and digital information; identifying, classifying and storing records; coordinating access to records; and executing a retention policy on the disposal of archives and records which are no longer required for operational reasons. This principle applies to both records and archives in analogue and digital formats. However one issue that is peculiar to digital archives and records is the difficulty in ensuring that the content, the context, and the structure of records is preserved and protected when the records do not have a physical existence.

## **Electronic Preservation of Archives and Records**

Apart from traditional practices of preserving archives and records, there is an electronic approach being adopted today because the contents of records and archives is becoming more of electronic than analogue in recent times. It is taking a digital form. This is a process of taking a physical archival or records material and taking photographs of them or scanning the items and transferring the photographs into a digital medium. It also includes preservation of born digitals in the repository. Electronic preservation of archives and records includes the following:

### *Digital preservation*

Digital preservation is the management of information that appeared in traditional and electronic formats. Unlike analogue materials, a digital content requires constant and ongoing attention than preservation of other media. Digital preservation can be seen as the set of processes and activities that ensure continued access to information existing in digital formats.

In modern libraries, Archives, and Records, both *made* digitals as well as *born* digital materials are collected, and because they are bound to aging, deterioration or decay, they needed to be preserved and conserved. How?

Information technology are making some library and archival materials to appear in electronic formats and consequently tasking information science professionals on the needs to protect them from decay and obsolescence. Due to technological obsolescence, there are several additional strategies that librarians and archivists may use to actively combat the loss of digital information. They include:

*Migration:* Migration is the transferring of data to newer system environments (Garett et al, 1996). The purpose of migration is to keep on preserving the information in electronic formats and maintain the ability of users to keep on using them in the face of constantly changing technology. This may be conversion:

- Of resources from one files to another, example, conversion of Microsoft Word to Pdf or Open Document;
- From one operating system to another, example is conversion from Windows to Linux;
- Or from one programme language to another, example, conversion from C to Java; so that the resources will remain fully functional and accessible.

One setback in this method is that resources that are migrated run the risk of losing some type of functionality because newer formats may not be capable of capturing all the functionality of the original format. It may also be that the converter itself may not be able to interpret all the nuances of the original format.

*Refreshing:* This is the transfer of data between two types of the same storage medium so that there are no changes or alteration of data (Cornell University Library, 2005). It is a way of periodically moving files from one physical medium to another in order to avoid obsolescence or degradation of the storage medium. An example is transferring voters' registration or census data from one old preservation device, example CD to a new one.

*Emulation:* the purpose of emulation is for older datasets to be allowed to run on modern computers. Unlike migration emulation focuses on application software instead of the files containing the data. It seeks to develop new tools that will create conditions under which the original data were created.

*Replication:* this involves creating duplicate copies of one or more systems. Data that exist as a single copy in one location is highly vulnerable to software or hardware failure, intentional or accidental alteration, and environmental catastrophes. For preservation and conservation, data is more likely to survive if it is replicated in several locations. However, replicated data may create difficulties in refreshing, migration, versioning and access since they are located in multiple places.

### **Preservation and Conservation of Born Digital (Electronic) Materials**

*Born digital archives* are an archival material which was originally created in electronic format; examples are film and moving images. They were not initially intended to have analogue equivalent, unlike made digital which was made digital files by conversion or scanning. An example of *made digital* is the conversion of students' research theses to

electronic formats through digitization initiative currently going on in the Nnamdi Azikiwe Library, University of Nigeria Nsukka.

The film preservation or film restoration movement is an ongoing project among film historians, archivists, librarians, museums curators and cinemateques to rescue decaying films materials and preserve the image from decay.

Preservation of film means physical storage of the film in a climate- controlled vault, and sometimes to repairing and copying the actual film element. Restoration on the other hand, is the act of returning the film to a version most faithful to its initial release to the public. In order to achieve this,

- Films, electronic tapes, CD plates, should be stored in non magnetic containers
- They should be protected from high intensity and electrical magnetic fields;
- Deteriorating electronic records should be recopied before the onset of deterioration;
- They should be kept in a dry or non moist containers;
- And should be protected from dust and sunlight.

### **Challenges of Electronic Preservation and Conservation of Archives in Developing Countries**

Preservation and conservation of archives and records is not without some constraints especially in developing countries like Africa where information and communication technology is gradually being incorporated into every sphere of library and information science operations. Some of these constraints include;

a. *Changes in software and hardware:* Frequent changes in soft ware and hard ware create greater pressure on archival institutions because preservation of digital archival collections centers on the interim mechanism for storing the digital information, migrating to new form and providing long-term access. One of the greatest issues facing the longevity of digital collections in developing countries is not only the storage media deterioration, but the problem of rapidly changing storage devices. Unlike analogue information which places emphasis on the preservation of physical artifacts, it is the informational contents of the digitized material that is preserved. It will therefore take a conscious effort of archivists in Africa and other developing countries in the world to make sure that the digital information is preserved since "continuously change in software and hardware creates headache for staff working on digital longevity" (Besser, 1999).

- g. *Legal/Copyrights Issues.* Who owns it? Selection of archival materials for digitization should first be based on a clear understanding of copyright law and rights of ownership (de Stefano, 2000; Tennant, 2000). Does physical ownership mean rights of reproduction? Physical ownership of records does not mean that an institution owns the rights to reproduce it. One of the most important selection criteria for digitization will be the copyright status of the original materials. Will it be possible to obtain permission to digitize? After digitization, will African institutions be able to protect the digital assets by managing the rights to their use? If the institution does not have the rights to digitize, or the means to manage the digital assets, then digital project should not be embarked on.
- h. *Inadequate Funding:* - Digital projects are expensive. Digitization of archives requires enormous funding due to frequent hardware and software upgrades, and increasing cost of subscription to electronic databases (Jain, 2002; Mutula, 2003). Apart from inadequate fund to train archivists in Africa, training of archivists in

digitization and preservation creates a herculean problem. A well funded digitization project assures new and improved services and sustainability of the project.

- i. *Computer Phobia*: Due to inadequate skills in information technology in Africa, many traditional librarians and archivists are conservatives and have phobia for computers. Because of generation gaps between the new and old professionals, computers are perceived as a threat to their status as experts. Thus, they find it difficult to cope or measure up with the requirements of the electronic/digital age, and are at the same time 'too reluctant to jettison the old practices for new one' (Ayoku & Ojedokun, 2008). Successful application of information handling technologies in developing countries requires an ability to overcome staff and personal resistance to such innovation.
- j. *Technical Expertise*: One of the biggest challenges to preservation and conservation of archives and records in developing countries is educating the library community on the best ways to handle library and archival materials. This challenge is exacerbated by the fact that preservation is not at the center of most library science curricula. There are few places or nowhere, for example in Nigeria where one can receive formal specialized education in preservation and conservation of archives and records. Added to this is the fact that inadequate technical expertise is prevalent in many African countries. There is shortage of personnel/human capital. Few librarians with computer science qualifications (computer engineers) work in archives and libraries, hence the consequent frequent break down of ICT facilities and disruption of services in digitized libraries and archives. In many African countries, human resources with appropriate skills, competences and attitude are not readily available to initiate, implement and sustain digitization project, and most African states are still lagging behind in technological and telecommunications infrastructure. Added to these is the fact that as Ngulube (2004) in Constable (2008) argues, African trainers (archivists) lack expertise and are ill-equipped to train others in electronic preservation and digitization as was obtainable in America and other European countries.
- k. *Inadequate Technology Infrastructures*: Frequent power outage constitute serious bottleneck to digitization in Africa. This has the effects in damaging digital equipment and where there is a standby electric generator, the cost of running them is prohibitive. Added to this is the harsh environment of Sub-Saharan Africa which is not always friendly with technology equipment. "Most countries in Africa" Zulu (1994) reports, "do not have adequate and reliable supply of electricity which consequently makes it impossible to maintain a conducive and sustainable technological environment suitable for digitization project in the continent". Again, telecommunications infrastructures in most African countries are either lacking or poorly developed, and few African states have modern digital and packet switching telecommunications facilities needed for data transmission.
- l. *Technological Obsolescence*: The continuous changes in computer hardware and software cause technological obsolescence which is a threat to digitization and digital preservation in Africa. It causes the loss of the means to access to information in digital form. Technological obsolescence is caused by continuous upgrade of operating system, programming language application and storage media. Alegbeleye (2009) suggested that digital archives should be transcribed every ten to twenty years to ensure that they will not become technologically obsolete.
- m. *Lack of Legislation/Policy*: Wamukoya & Mutula (2005) observe that legislators in Africa are neither aware of, nor conversant with the requirements of digital preservation and for that reason; they either ignore or inadequately cover digital preservation issues. The Internet links is also a challenge to digitization because of copyright legislation. The copyrights of software needed to access digital files, and the right to copy for preservation has not been adequately articulated in most

national legislation, and if permission for digitization cannot be obtained, digitization of such materials should not proceed.

- n. *Deterioration of Digital Media*: Rapidly changing technology and continuous introduction of *new products*, which make it necessary for information professionals to keep abreast of these developments and assess how the technologies and products can be incorporated and exploited in their service. That is the more reason why Hazen, Horrell and Merrill-Oldham (1998) in Hughes (2000; 2004) asserts that the reason why re-digitization is unavoidable is the likelihood that electronic resources created in previous years using older technologies may not be accessible or compatible with the new technologies.

Deterioration of digital media is responsible for the disappearance of, or inaccessibility of digital information in the long run. This is because media deteriorates or decays within few years after digitization. Another challenge is that digital media get lost during disaster or virus attacks, and in Africa there may be absence of or inadequate organizational plans to manage e-records. These, in addition to the harsh environmental conditions of the Sub-Saharan Africa, which accelerates degradation of electronic equipment demand for re-digitization. Hazen, Horrell, & Merrill-Oldham (1998), in Hughes (2004) writing on the rationale for re-digitization advocated that the reason why re-digitization is inevitable is the likelihood that electronic resources created in previous years using older technologies may not be accessible or compatible with the new technologies.

j. *Absence of preservation/conservation librarian* in many academic libraries in Nigeria slows down preservation practices. There is no librarian, professionally trained and given the task of managing deteriorating library books, or archives and records. Instead, each section organizes how their aging materials should be moved to the bindery section for repair, subject to availability of binding materials.

## **Conclusion and Recommendations**

This paper examined the relationships between archives and records, preservation and conservation, as well as the remote and immediate preservation plans and methods adopted in many libraries, archives and records centers. It discussed the analogue and digital preservation methods and the attendant drawbacks that are inherent in electronic preservation practices.

It saw underfunding of libraries, archives and records repositories, lack of training and manpower skills in the use of information technologies to preserve archives and records, absence of professional preservation librarians and the continuously changing technology as the greatest threats to preservation practices in the electronic environment.

In view of the fact that preservation and conservation is not given adequate attention in academic archives and records centers in developing countries, professional librarians or archivists are required to be appointed in academic archives for the evaluation, appraisal, retention, repair and maintenance of archives and records. Funds specifically for the maintenance of deteriorating and decaying archives and records collections should be included in library budget. Others include;

Refreshing: - *This* is a way of periodically moving files from one physical medium to another in order to avoid the obsolescence or degradation of the storage medium. Refreshing enables digital files to be transferred periodically to new physical storage media in order to refresh the materials and keep it from physical decay and obsolescence of the medium, or

the materials will be inaccessible. Loss of format is a troubling issue because as information is transferred from programme to programme, information is lost when analogue material is digitized, and information may also be lost as digital resources are refreshed or migrated to modern computing environments. As Besser (1999) remarks "although identical digital copies may be made from digital files, functionality from every software programme cannot be emulated".

| Emulation: - The objective of emulation is for older datasets to run on contemporary computers. Emulation may be similar to migration, but focuses on the applications software rather than on the files containing the data. It seeks to develop new tools that will create conditions under which the original data were created. This can be done by mimicking early operating systems and software applications. For African archivists, digitization of archival collections does not necessarily end in conversion of analogue contents to digital formats, it hinges on continuous sustainability and accessibility of the digitized materials in electronic environment.

Continuous Migration: - The purpose of migration is to keep on preserving the intellectual contents of digital objects and retain or maintain the ability of users to keep on using them in the face of constant changing technology. Migration is the process of periodically moving files from one encoded environment/ format to another and updating the information to one that is consistent with more recent computer environment. Examples include moving information from Word Perfect to Microsoft Word95, and then to Microsoft Word97, migrating datasets from Dbase to MySQL or word processed files from Window 2000 to 2007, and so on. Migration is seen as a means of overcoming technological obsolescence by transferring digital resources from one hardware/ software generation to the next. Few African countries and institutions have the required funds to maintain problems that arise as a result of migration.

*Development of Digitization Policies:* Policies for selection of new materials for digitization should be developed, and digitization policies will make it possible to identify archival collections that add value to these goals. In developing institutional policies on selection of materials for digitization, some of these questions which borders on: whether the materials have sufficient value to ensure interest in digitization; digitization will enhance access or increase use; the rights and permissions for electronic distribution securable; the goals that will be met by digitization; the institution have sufficient expertise in digitization project management; and organizational and technical infrastructure adequate need some answers.

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Zulu, S.F.C. (1994). Africa's survival plan for meeting the challenges of information technology in the 1990s and beyond.

# **Undergraduate Student Awareness of HIV/AIDS and Information Needs: A Study of University of Agriculture, Abeokuta, Nigeria**

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## **Introduction**

A university student sent an e-mail to twelve university officials announcing a "public health threat to the UGA Athens campus. The student asked officials to support sanctions in this case to prevent an HIV outbreak among UGA student body". The student revealed he contracted HIV from another student who had been sleeping with other students and lying about his HIV- positive status. (An independent student newspaper, University of Georgia).

Few factors impact our ability to protect our selves from HIV more than our level of self-esteem. Until recently, young people in Nigeria have been only moderately affected by the global HIV epidemic. Today, however, the HIV epidemic in Africa is one of the most rapidly increasing epidemics in the World. It is mainly concentrated to vulnerable groups such as intravenous drug users, sex workers, the purchasers of sexual services and the financially marginalized. Young sexually active people may however be the gateway for the epidemic to the general population and knowledge about their attitudes and behavior is therefore important in planning preventive measures.

Nigeria's epidemic is characterized by one of the most rapidly increasing rates of new HIV/AIDS cases in West Africa. Adult HIV prevalence increased from 1.8% in 1991 to 5.8% in 2001. This infection rate, although lower than that of neighboring African countries should be considered in the context of Nigeria's relatively large population of approximately 117 million; the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates that 3.5 million Nigerian adults children were living with HIV/AIDS by the end of 2001. Current projections show an increase in the number of new AIDS cases from 250,000 in year 2000 to 360,000 by year 2010. As a result of the epidemic, the crude death rate in Nigeria was about 20% higher in 2000 than in 1990. In 2001 alone, 170,000 adults and children died of AIDS. At the end of 2001, UNAIDS estimated that 1million children orphaned by AIDS were living with HIV in Nigeria. Several factors have contributed to the rapid spread of HIV in Nigeria. These include sexual networking practices such as polygamy, a high prevalence of untreated sexually transmitted infections (STIs), low condom use, poverty, low literacy, poor health status, low status of women, stigmatization and denial of HIV infection risk among vulnerable groups, and regional political groupings all of which are major challenges for HIV prevention programs. In the whole World, Nigeria has the third highest number of people estimated to be living with HIV/AIDS, second in Sub-Saharan Africa and the highest number in West Africa, because Nigeria has such a large population, it represents a significant share (14%) of people with HIV/AIDS in the Sub-Saharan African Region. HIV is high among young people in Nigeria especially young women, among those ages 15-24, the estimated number of young women living with HIV/AIDS was almost twice that of young men.

A recent study by Peters and Olugbemiro (2005) shows that the introduction of an HIV/AIDS program at NOUN would contribute to raising the level of awareness in the different segments of the Nigerian society, stimulate research and create research networks on HIV/AIDS in Nigeria. It also notes that the programme would facilitate human resources capacity building and support positive behavioral changes. An earlier study by Aderinoye and Ojokheta (2004) investigated the links between DE and HIV/AIDS. This study shows that DE in Nigeria and throughout the continent of Africa is helping to democratize and spread knowledge, even to those living in remote, marginalized and isolated communities. In another study, Pridmore and Yates (2006) examined the strength of open, distance and flexible education in HIV/AIDS prevention and mitigation. These scholars argue that to confront AIDS and meet millennium developments goals (MDGs) in countries where HIV/AIDS is prevalent, government must go beyond current efforts and accelerate conventional response. This can be achieved by increasing access and quality of education and schooling, raising public consciousness and encouraging people to practice healthy behaviour. When a society needs to face a problem, it typically turns to its schools and asks what they are doing about it and in the context of HIV/AIDS, schools are expected not only to teach, but also instill in their students the skills, knowledge and values that promote safe behaviours in order to protect themselves against HIV infection.. Yet, there are more challenges to these responses from the universities which themselves are not HIV- free. Kelly (2003) argues that despite the high prevalence of HIV/AIDS inside university populations (i.e. staff and students), it is apparent they have no institutionalized response to slow the scourge.

Indeed, formal responses to the epidemic have not yet been integrated into their core operations. Recent literature shows that African universities are coming to the realization that HIV/AIDS is real and that death is now a daily reality for their staff, their students and the communities they serve. Pioneering efforts by the Association of African Universities (AAU), the Association Commonwealth Universities (ACU) and the South African Universities of Vice-Chancellors Association (AUVCA) have impressed upon African Universities, the need to adopt a holistic response to the epidemic within their institutions and across the entire higher education sector. The Working Group on Higher Education (WGHE) for the association for the development of education in Africa (ADEA) decided to undertake case studies that examine the ways HIV/AIDS affects several universities in Africa and to document these universities' particular responses and coping mechanisms. Out of these case studies emerged a synthesis entitled. "Challenging the challenger, Understanding and expanding the response of universities in Africa to HIV/AIDS" (Kelly, 2001). This knowledge that a thick cloak of ignorance surrounds the presence of the disease in the universities-a cloak of death that is lined with layers of secrecy, silence, denial and fear of stigmatization and discrimination.

The study of Momoh et.al (2006) shows the level of awareness of HIV/AIDS among female undergraduate students to be moderate. Also, Ruma (2009) conducted a survey on knowledge and awareness of HIV/AIDS among some senior secondary school students in Katsina State, Nigeria and observed that through the general level of knowledge and awareness of adolescent secondary school students in Katsina on HIV/AIDS that majority of the respondents had heard of the disease. It is also becoming clear that the student's reliable means of obtaining correct information on the subject of HIV/AIDS are through television, posters and radio. In the same vein, Lon, et.al (2007) conducted a study among medical students in the Xinjiang medical University in 2006 and found that all but one student had heard about HIV/AIDS and approximately 95% knew the most common routes of transmission are sexual intercourse. Currently, there are 2.7million people living with HIV/AIDS in Nigeria and about 80% of HIV infections in Nigeria are contracted through sexual intercourse (UNAIDS 2002). HIV is transmitted to the babies of HIV-positive mothers

in 24-45% of births, which has led to increasing number of AIDS orphans, many of whom are also HIV positive.

In Nigeria, studies on university population are few despite the vulnerability of students to unsafe sexual practices. Arowojolu et.al (2002) in a study on sexuality, contraceptive choice and AIDS awareness, discovered that women were more likely than men to have relationship with older partners, for monetary gains, maturity and understanding by older partners, and security. It was equally discovered that 60% had two or more current sexual partners. Studies on information needs, seeking and use are central to information research. Tahur and shafrique (2008) investigated the information needs and seeking behaviour of scientists, social scientist and humanities while kuiper and Terwal (2008) studied the information needs and seeking behaviour of undergraduates. Agboola, (2010) also studied information seeking behaviour of academics. Ankem (2006) investigated the use of information sources by cancer patients and found that health care professionals, medical pamphlets and family/friends were the most used sources of information.

In Nigeria, studies have focused on specific interest or user groups. Adimorah (1983) studied information needs of hairdressers, rural farmer, caterers and custom officers in Imo state. Camble (1994) investigated the rural people of Borno state. Mabawonku (2004) studied information needs and use of artisans while Adetoro (2004) examined the pattern of information provision and needs among commercial motorcycles operators in Ogun state. Adetoro (2009) also studied information needs of persons with HIV in Ijebu-Ode. Edem (1993) and Popoola (1996) investigated the information needs, seeking behaviour and use among journalists and civil servants respectively, while Popoola (1996) found that workers in the civil service use information obtained to solve problems which may be related to job performance or personal matters.

These studies clearly highlighted the specific nature of the information needs of groups studied, their information seeking behaviour and how they utilize information sources.

Libraries which the society known to be the repositories of accumulated knowledge and for disseminating the information to its users have an important role to play in the provision of health information. According to Lancaster (2003), people generally see libraries as familiar, accessible and a reliable source of information and more so going to the libraries do not carry any stigma. There is the need for provision of health information series through libraries to the high risk population especially young adults and mostly university students who are increasingly making themselves vulnerable to HIV/AIDS, through alcohol, drug abuse and peer group pressure. Charles (2003) maintains that libraries have a moral vindication to provide access to information for children and young adults with special attention to AIDS issues. Libraries especially academic libraries can play a pivotal role in educating undergraduates about the disease and ways of preventing its spread. Awareness campaign on campuses should bear in mind that the seriousness of the social stigma attached to the disease should be intensified. Libraries in their various locations must serve as powerful agents for creating awareness and disseminating relevant information among the student. Ruffin (2005) recommended collaboration between health sciences libraries with community-based organizations to promote access to health information. Williams et.al (2003) found a huge variation in reasons for going to the internet assessing health information by varieties of people (youths, patients, students, professional or for general interest).

## **Problem Statement**

The HIV/AIDS pandemic remains one of the greatest health challenges facing the World today. In Africa, HIV is predominant among young people for they constitute larger percentage of the society. This research therefore is to determine awareness and area in which information is being sought.

## **Objectives**

1. To determine the level of awareness of HIV/AIDS among University students.
2. To determine ways in which HIV/AIDS is contacted known to students.
3. To determine the sources of gathering information
4. To determine the information needs of the respondents
5. To suggest the way forward in minimizing the spread of HIV/AIDS in Nigerian Universities.
6. To determine the challenges faced by the students.

## **Methodology**

The data used for the study were collected through the use of questionnaires administered to the undergraduate students of university of Agriculture, Abeokuta, Nigeria. A random sampling technique was used to select 2,400 students from the university with 300 students in each faculty/college. The questionnaire was designed to consist five parts: the socio-demographic characteristics; level of awareness of HIV/AIDS among university students; ways in which HIV is contacted known to students; sources of information used by the students; area in which information is being sought; the way forward in minimizing the spread of the disease as well as the challenges faced by the students when seeking for information on HIV/AIDS.

Out of 2,400 copies of the questionnaire administered to the eight colleges, 2000 copies were returned which constitute 83.3% response rate. Out of the 300 copies distributed in each college, certain percentages were returned as contained in table 1. The eight colleges under study are College of Agricultural management, rural development and consumer studies (COLAMRUCS), College of Natural sciences (COLNAS), College of environmental resources management (COLERM), College of plant science and crop production (COLPLANT), College of engineering (COLENG), College of animal science and livestock production (COLANIM), College of veterinary medicine (COLVET), College of food science and Human ecology (COLFHEC). The data collected were analyzed and results tabulated using percentages and frequencies.

## Results

Table 1: Copies of questionnaire returned in each college

COLLEGE	QUESTIONNAIRE RETURNED	PERCENTAGES
COLAMRUD	260	13
COLFHEC	210	10.5
COLNAS	290	14.5
COLERM	250	12.5
COLPLANT	300	15
COLENG	240	12
COLANIM	230	11.5
COLVET	220	11
TOTAL	2000	100

Table 2: Awareness of HIV/AIDS

Awareness	Responses (%)
Yes	1957 (97.85)
No	43 (2.15)
Total	2000

Virtually all the respondents, 1957(97.85%), had heard about HIV/AIDS and only 40 (2.15%) claimed that they were not aware of the disease. Table 2.

Table 3: Sources of gathering knowledge/awareness on HIV/AIDS

Sources	Frequency	%
Newspaper	184	3.0
Television/ Radio	1888	31.0
Friends	253	4.2
Print materials	1009	16.6
Electronic Resources	398	6.5
Parents	146	2.4
Health workers	254	4.2
Magazines	189	3.1
Library/ Librarians	123	2.0
Internet	657	10.8
Posters/ Pamphlets	989	16.2
Total	6090	100.00

Students were allowed to choose more than one source of awareness; Television/Radio (31%) was the most common source while library was the least source of awareness on HIV/AIDS. Table 3.

Table 4: Ways of contacting HIV/AIDS known to students

Ways	Yes (%)	NO (%)
Unprotected Sexual intercourse	1127 (49)	0 (0)
Incisions/ Tribal marks	213 (9.3)	55 (3.0)
Contact with body fluid	376 (16.3)	228 (11)
Ear piercing	67 (2.9)	723 (35)
Sharing injection needles	489 (21.3)	45 (2)
Kissing/ Hugging	28 (1.2)	994 (49)
Total	2300 (100)	2045 (100)

When students were asked to choose between the listed variables the ways of contacting HIV/AIDS known to them, students were allowed to choose more than one options; unprotected sexual intercourse (49%) had the highest, followed by sharing injection needles (21.3%). Table 4

Table 5: Areas in which information is sought

Areas	frequency	%
HIV/AIDS educational information	345	17.2
General Health information such as causes, symptoms, treatments and prevention	1537	76.8
Social services information	58	3.0
Information on Government policy on HIV/AIDS	60	3.0
Total	2000	100

Students indicated that the area where they needed information most was on its health i.e. causes, symptoms and treatments (76.8%)

Table 6: Suggestions on the way forward in minimizing the spread of HIV/AIDS

Suggestions	frequency	%
Organizing orientation talks	289	12
Youth empowerment programme	495	21
Outreach services	1006	43
Displaying books on HIV/AIDS	167	7
Postage of Bill Boards	398	17
Total	2355	100

Students were asked to suggest the way forward in minimizing the spread of HIV/AIDS, they admitted that outreach services (43%) was the best way to minimize the spread of HIV/AIDS.

Table 7: Challenges faced by the respondents in seeking for Health Information on HIV/AIDS

Challenges	Frequency	%
Inadequate information in the library	405	17
Lack of information technologies to search for the information in the internet	329	14
Problems of people looking at you as if you have contacted the disease when seeking for information	816	36
Inadequate of health workers to assist you when seeking for information at the university health centre	705	33
Total	2255	100

The challenges faced by the students were analyzed, multiple choice questions were allowed, Table 7 above indicated that the greatest problem they were facing was the problem of people looking at you as if you have contacted HIV/AIDS with 36% response rate followed by the problem of inadequate of health workers to assist at the university health centre (33%).

## Discussion

Given the early stage of the HIV/AIDS epidemic in Nigeria, awareness and appropriate knowledge may play an important role in preventing the further spread of HIV/AIDS among the general population. As HIV/AIDS continues to spread and affect the lives of millions of people, a sense of urgency has developed about the imperative need to stop the epidemic. The youth are the high risk vulnerable groups for the transmission of HIV/AIDS. The human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS) principally, attacks CD4T-cells, a vital part of the human immune system. The study revealed that virtually all the students had heard about HIV/AIDS which corroborated the study of Ruma (2009) who conducted a survey on knowledge and awareness of HIV/AIDS among some students in Katsina State and found that virtually all the students are aware of HIV/AIDS only few said they weren't aware, this in line with the study of Lon, et.al (2007) that conducted a study among medical students in the Xinjiang medical University and found that all but one student had heard about HIV/AIDS.

The study also found that sources respondents used in gathering information on HIV/AIDS are mainly Television and Radio. Table 4 is the summary of the responses received on the by which the respondents derive knowledge about HIV/AIDS, this also corroborated the study of Ajayi and Omotayo (2010) who studied the challenges of HIV/AIDS to undergraduate students and found that the major source of information is from radio and television, and also the study of Adetoro et.al (2009), they found that the most sources of information are mainly from radio and television.

Table 3 was the responses received on knowledge of some issues related to the transmission of HIV/AIDS disease. A close look at the table reveals that unprotected sexual intercourse (49%) was the major means by which the disease was transmitted, sharing injection needles (21.3%) was the next one and the least was the kissing/Hugging (1.2%) as the means of contracting AIDS known to students, this finding also agrees with Ruma (2009) that common means of contracting AIDS is from sex.

Respondents admitted that the area in which they needed information most was on its general health which has the highest percentage (76.8%) while educational information has (17.2%). Information on its social services has the lowest (3%).

Outreach services cover all forms of programme designed to provide

Information to the students with highest percentage of 43%.

The challenges the respondents were facing most was the problems of people looking at them as if they had contacted the disease not knowing that they were just looking for the information that would guide them and know more about its causes, symptoms and treatments.

### **Conclusion and Recommendations**

Information on HIV/AIDS to this vulnerable and most economically important group is still inadequate, as reflective of the society. Appropriate information, education and communication strategies must be packaged towards these students. The study also further revealed that the area in which the students needed information most was the area of its health information such as its causes, symptoms, treatments and prevention.

The study recommends that:

1. A well organized programme in form of awareness or outreach services should be made available and also the following materials and equipments which include book mobile services, books, journals, pamphlets, booklets, newspapers, articles on subjects like HIV/AIDS, sanitation, Agriculture, local crafts etc, dissemination of relevant information through talks, meetings, demonstrations, displays, films and slides or other audio visual presentations and computer assisted learning materials.
2. Library should issue out publications to guide the public on the menace of HIV/AIDS. This publication will provide details and accurate information about HIV/AIDS. It could be well illustrated by coloured photographs. It must contain postal address, telephone and fax numbers, e-mail and web site address that provide relevant information about HIV/AIDS. Also, there is need to liaise with electronic database providers in order to acquire recent scientific publications on HIV/AIDS electronic materials. Librarians should be committed on the creation of databases on HIV/AIDS and documentation i.e. indexing and abstracting articles for easy and fast dissemination to users.

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# **The Library as a Means of Educational Rehabilitation of Prison Inmates in Nigeria**

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## **Introduction**

Learning is a continuous exercise. Regardless of age, sex, religion, ethnicity, colour, race etc everybody needs to learn to keep up-to-date, be informed and be able to take reasonable decision(s). Whoever ceases to learn, ceases to live; says an adage. With this background information, it can be inferred that both those who are held in confinement (incarceration) and those who walk freely on the streets, need to be adequately informed through exposure to learning and reading of the relevant literature, namely books and non-book materials, which only the library can provide.

Oreh (2006) rightly observed that education in prison is necessary because its provision will make the prisons become places of continuous and informal learning rather than 'schools of crime'. Education in prison should not be seen as mere skills for jobs but as a path to personal employment, enhanced citizenship and better health. Non-formal innovative approaches must be used. Prisons education is also an aspect of lifelong learning which every adult whether 'free' or 'restricted' should be entitled to. Prisons education should provide a second chance learning to the inmates. It is believed that when fully motivated, the prison inmates will come out of the prison better than they were when they entered.

## **Brief on prisons**

The first prison in Nigeria was established in 1872 in Broad Street, Lagos as reported by Ejimofe (2010). There are 227 prisons, 86 satellite prisons and 11 prison farm centres throughout Nigeria. The population has gradually grown from about 41, 406 (National Prison Administration, 2009) to 46, 000 by April, 2010 (Guardian newspaper, 2010). Therefore, considering the number of inmates held in confinement in the various prisons, there is an urgent need for the various prisons to be provided with well stocked functional libraries to guarantee that these inmates are meaningfully engaged in use of the library resources for their educational rehabilitation, to make them 'new creatures' on their release. A prison, according to Ejimofe (2010), is a place where individuals are physically confined and deprived of a range of personal freedom.

Enuku (2001) notes that the establishment and growth of the prison is backed by various statutes from the colonial period to the present. Among these are the Prisons Ordinance of 1916; Laws of Nigeria (1948 & 1958) and the Prison Decree No. 9 of 1972. A Government White Paper in 1972 outlined the functions of the prison service to include: custody, diagnosis, correction, training and rehabilitation of incarcerated offenders. The Nigerian Prison Service Staff Duties Manual listed an additional function; generation of funds for the government through prison farm and industries. Similarly, the colonial ordinance of 1916 and the Laws of Nigeria 1948 and 1958 identified the function of the prison to include the safe custody of a prisoner. A close study of colonial and post colonial laws seem to emphasize the custodial functions of the prison while silent on correctional functions of the modern prison.

Alemika (1987) opines that the initial purpose for the establishment of prisons worldwide was for custody and punishment of those who were found guilty in the criminal justice system. They were locked up until they could be executed or subjected to other forms of suffering. In North America in the 18th century, the Quakers advocated solitary confinement and prisoners were confined in complete solitude by day and night. They were only permitted to read the Bible which would afford them religious piety. By mid-nineteenth century, prison reformers used different philosophy of punishment to include penitence and correction. Prisoners were put to work and trained to acquire skills while in prison and education was highlighted as a veritable tool for skills acquisition. However, for education and skill acquisition to be effectively exploited, the library cannot be ignored. The library resources for the actualization of the set goals must be provided and made accessible to the inmates.

Enuku (2001) observes that education is a marginal activity in Nigerian prisons. Stressing that at best, it takes the form of unorganized apprenticeship for a small number of prison inmates which is a means of maintaining the prison system. Enuku laments that anomie, alienation, apathy, contamination are all negative concepts which aptly summarizes the prison environment and there would seem to be very little education could contribute to reduce these influences while it received no financial resources from the government. A budgetary allocation for education according to Enuku, would have to be accompanied by a major attitudinal change by the prison authority if education was to contribute positively to the role assigned to it by Decree 9 of 1972. There would need to be a greater degree of collaboration between prison authority, higher education institutions and educational agencies outside the prison so that a prisoner's educational interests, initiated in the prison might be followed into the immediate post-release period. The continuity of educational experience would also need to be taken into account during transfer of prison inmates from one prison to the other.

### **Prisons and Prison inmates**

Prisons are purposely established to house or quarter law breakers and also those who are suspected of breaking an established law in a given society. Prisons are also referred to as correctional institutions where offenders are given some sort of training while in confinement to prepare them for integration into the larger society on release. Once an individual is confined in a correctional institution, he/she loses his/her freedom: freedom of movement, association, expression, political freedom and some other human rights provisions enshrined in the constitution of the country where he/she is confined (Okwor, Ugwuanji and Ezeji 2010).

Omagbemi and Odunewu (2008) opines that prisons are established confinements for the safe keeping of those legally interned or awaiting trials. Whichever is the case, except for those who are to be executed upon the pronouncement of death penalty on them, prisons are expected to transform and reform the interned towards the re-integration of the affected individuals into the larger society on completion of their terms. For prisons to achieve the objectives of reformation and rehabilitation, there is the need for training and re-training of inmates. Training and re-training require exposing them to adequate and timely information, obtainable mainly through the library. Information is a major resource in human development as access to it or otherwise could improve (make) or mar their knowledge. The prison inmates remain as members of the larger society whose movements are restricted. Thus, the prisons aside from serving as a custodian for convicted people, also doubles as a reformation and rehabilitative centre that needs the library to be able to function adequately and effectively.

## Plight of prison inmates in Nigeria

The Nigerian prisons are over-flowing with convicted and unconvicted inmates. Ore (2006) cited Adeoye (1996), where in a survey, highlighted that the 143 prisons originally built for 33, 348 inmates now house 55, 000. And out of this figure, 35, 750 are of the Awaiting Trial prison category that may have spent over five years in custody waiting to be tried. About 9, 905 of such inmates died in the last five years of which most were starved to death. In addition, it was reported that the prisoners had no food, no medical care, no money and no education and training. The civil society of Nigeria, particularly those concerned with education, pay lip service to education and training of the prison inmates. Omotunde (1989) lamented that the British who introduced the prisons system to Nigeria have carried out massive reforms in terms of rehabilitation of the inmates.

In a survey of the prisons, the Vanguard newspaper observed that the Nigerian prisons hold twice their capacity and paucity of funds has made the upkeep of the inmates provision of facilities a near impossible feat while facilities for rehabilitation of prisoners, which is a major reason for imprisonment, are virtually lacking or grossly inadequate (Vanguard 1998).

The overcrowding nature and the inhuman conditions in the prisons have led to the prisons being variously described as 'human cages' (Kayode 1987) cited by Enuke (2001) and human zoos (Newswatch 1985; Tell 1998) with little or no provision for organized educational programs. Mbah and Ajibade from Biu and Makurdi prisons respectively recall their experiences (Tell 1998). Mbah, a journalist who was convicted of involvement in a military coup and served three years in Biu prison before he was released in July 1998, observed that:

*Throughout the three years, I had no access to books. When I arrived there in 1995, they said I could only read the Bible. . . They would bring books from the library, they would not give me. They would give all their prisoners. . . They said I had not come here to read.*

On the other hand, Kunle Ajibade, another journalist convicted for the same 'offense' like Mbah, but was in Makurdi prison, reported that he read extensively while in prison- After screaming and a lot of hassles some of my books were sent to me. From his three years' experience at Makurdi prison, Ajibade concluded that, "In prison, I learnt that people could be so cruel. There is no reformation going on in our prison".

Confirming the grim conditions in Nigerian prisons, another journalist, Charles-Obi (Tell 1998) who was also convicted of involvement in the same military coup because they reported the story, observed that:

*It was a four-by-four room, completely dark and without ventilation. We were not allowed to see sunlight. We were in solitary confinement for about two months.*

The situation in the Nigerian prison policy is different in every respect as there is a wide gap between the ideal and real situation. Enuke (2001) observed that the government for political vendetta deliberately transfer some prisoners farthest from their home. Ajibade and Mbah earlier mentioned are typical examples. Makurdi and Biu prisons where they were kept are at least 800 kilometers away from Lagos where they both have their families. Choice of prison in these instances is meant to isolate them completely from their families, their friends and familiar environment.

Ajibade's experience tells the whole story:

*My happiest day in prison was when they brought my second son to me. My wife was carrying his pregnancy when I was arrested. He was born January 16, 1996 and he was brought to Makurdi prison in April 1996 (Tell 1998).*

Likewise, Charles-Obi, although, he was in Ibadan prison, which is about 100 kilometers, about an hour's journey by car from Lagos, was not allowed frequent family visits. In his own words:

*Initially members of my family were not allowed to see me. . . but later, the rule was relaxed. I had access to two people, each of them once in a month. Even at that, It was more of a 10 - 15 minutes affair (Tell 1998).*

The two people who were allowed to see him were the mother and his elder sister. Although, he was planning to get married, his fiancée was not one of the two visitors allowed to see him. If prison inmates are to maintain their family ties while in prison, it is only fair that regular and unsupervised visits should be encouraged including conjugal visits. Conjugal visits will no doubt help reduce in situ homosexuality in Nigerian prison especially with the AIDS virus spreading very fast in most African countries (Enuku 2001).

### **Need for Prison Libraries**

The library serves diverse purposes namely:teaching, research, recreation, community service etc

The UNESCO Public Manifesto (1995) in Okwor, Ugwuanyi and Ezeji (2010) stipulates that Public libraries have an obligation to serve prisoners.

According to IFLA Professional Reports No. 92 (2005) as cited by Okwor et al (2010), prison libraries can be effective management tool for the prison administration by reducing prisoner's idleness and encouraging constructive use of time. The prison libraries can be the vital information resource centres that make the difference of whether or not a newly released ex-offender fails or succeeds outside the prison.

Lehman and Locke (2005) said that in accordance with the United Nations Universal Declaration of Human Rights Society have shifted their focus from punishment of prisoners to education, rehabilitation and constructive use of time. The prison library then becomes an important part of the entire prison environment in its support for educational, recreational and rehabilitative programmes.

The prison library presents a window to the outside world and can provide much useful information for those preparing for release to the outside world. An incarcerated person has not relinquished the right to learn and to access information which the library can efficiently provide. Thus, the prison library should be well stocked to be able to offer materials and services comparable to community libraries in the 'free world'. Access can be however be denied if such material or information resource pose security threat to the prison administration.

## **Education as Inmates' rehabilitative measure**

Education in prison is necessary because its provision will make the prisons become places of continuous and informal learning rather than 'schools of crime'. Education in prison should not be seen as mere skills for jobs but as a path to personal employment, enhanced citizenship and better health. Non-formal innovative approaches must be used as opined by Oreh (2006). Prisons education is also an aspect of lifelong learning which every adult whether 'free' or 'restricted' should be entitled to. Prisons education should provide a second chance learning to the inmates. It is believed that when fully motivated, the prison inmates will come out of the prison better than they were when they entered.

It must be noted, however, that education cannot fully take place without a functional library. In other words, education is not complete without the library, which is the educational resource center of any institution, and at any level be it primary, secondary or tertiary institutions. Education and training according to Opara (1980) as cited by Oreh (2006), means converting the criminal into a useful social being while rehabilitation involves encouraging the inmates to abstain from criminal behaviour by providing him with social, educational and vocational facilities which will enable him to conform to the social pattern of life outside the prison wall.

Adigwe (1985) also cited by Oreh (2006), equally supported the claim that prison education is good enough to help the inmates in their rehabilitation. He stressed that some inmates turn to it for the relief of boredom, which is satisfying and thus increases self-respect. Moreover, education is a fundamental human right, which should be extended to both free citizens and prison inmates. Education is generally acknowledged as the brainchild of national development, thus no development can take place without first developing the citizens of the country, prison inmates inclusive. Education for all as stressed by the Dakar World Forum on Education in 2000 also buttressed Education For All (EFA), which is a right and restriction (imprisonment) of one's freedom does not suspend that right. Prison education is therefore, an attempt to make and remake, to change, which is to re-educate the inmates. Education in the prison is the image of what the prison is. It is a fundamental human right, which should not be denied prisoners.

## **Essence of rehabilitation of inmates**

The need to rehabilitate inmates while in confinement to make them better persons on release, cannot be overemphasised. Cuizon (2009) observes that Education in prison offered to inmates below 25 years old with less than 5 years jail sentence proves to be beneficial, not just to prisoners, but to the society as well.

Education programmes help promote inmates' welfare and this extends to the society as well. A study conducted by the US Department of Education, spearheaded by Stephen J. Steurer of the Correctional Education Association as cited by Cuizon (2009), revealed that inmates who took classes while in prison, either vocational training or classes at high school or college level, are less likely to go back to prison within the first three years of release.

The study followed more than 3, 000 prisoners in Maryland, Minnesota and Ohio. Results revealed that after three years of being released from prison, only 22 percent of the prisoners who were availed of inmate education, returned to prison compared to 31 percent of those who did not. Inmate education, therefore, will not only help the prisoner, but will also help preserve the public's safety as well. Crime reduction is an indirect result of inmate education as proven by this findings.

In the same vein, the Bureau of Prisons conducted research as reported by Cuizon (2009) on inmates who participated in programmes inside the prison, such as vocational training and mock job fairs. Their studies showed that these programmes that teach marketable skills to prisoners help to reduce recidivism or repetition of criminal behaviour patterns. Misconduct is also effectively reduced by these programmes because emphasis on personal responsibility, respect and tolerance of others are being taught. The Inmate Education enables inmates to acquire pro-social values and life skills.

### **The library as rehabilitative channel**

Libraries are places established for information gathering, processing, organizing, storing, retrieving and dissemination of information materials for public use. Libraries serve as recreational centres where interested individuals can go for their information, education and entertainment needs. Those who want to escape from the boredom of everyday life go to the library for relaxation. The link between the library and those in confinement is that the library is a veritable instrument for exposing the prisoners to critical information needs that are required to transform them to be useful to themselves and the larger society on release.

Shavit (1990) as cited by Okwor, Ugwuanyi and Ezeji (2010), opine that books are the first and the most important requirement in helping to fight boredom, in occupying and often in improving one's mind. Books immediately come to the mind of anyone who wants to help people in confinement. A prisoner lives in monotonous and drab environment, but through books, he can escape into another world. His intellect, imagination or emotions can be stimulated by what he reads. Books are food for the mind rather than the body which the library provides as a rehabilitative and reformatory measures for the inmates.

Regarding libraries as integral parts of prisons' functional role of reforming the inmates, Fyfe in Curry (2003) opined that British prisons established libraries as early as 1699. Also, Engelberts (1972) in Curry et al (2003) posits that American prison libraries were established as far back as 1790. Rule 40 of the United Nations Standard Minimal Rules for the Treatment of Prisoners 1955 states: "Every institution shall have a library for the use of all categories of prisoners, adequately stocked with both recreational and instructional books and prisoners shall be encouraged to make full use of them".

Lehman and Locke (2005) revealed that IFLA's libraries serving disadvantaged persons (LSDP) section provides leadership to libraries, associations and government agencies for the development of specialized services to those groups within the community who are unable to make use of conventional library services.

These groups include persons in hospitals and prisons, the elderly in nursing homes and care facilities. The house bound, the deaf, the physical and developmentally disabled and those with reading difficulties.

The Education in prison project, endorsed by the Council of Europe as remarked by Strasbourg (1990), also cited by Okwor, Ugwuanyi and Ezeji (2010) recommends that the prison library should function with the same professional standards as libraries in the community.

The library should be managed by a professional librarian; should meet and should provide a range of literacy and reading related activities. Likewise, Sharit (1999), also cited by Okwor, Ugwuanyi and Ezeji (2010), stated that in 1939, The World's Committee of the Young Men Christian Association (YMCA) with its headquarters in Geneva, Switzerland,

established the War Prisoners Aid in order to satisfy the recreational, educational and moral needs of war prisoners. The association considered reading materials as very important in the life of a prisoner.

## **Recommendations**

The library can make significant impact in the lives of inmates as a form of rehabilitative measure, if the various prisons have functional libraries. The following are being suggested as recommendations to ensure that inmates are endowed with knowledge while in confinement to soften their hardened heart.

- The prison libraries are correctional institutions which is beneficial to the inmates. Efforts should therefore be geared by the government at ensuring that inmates are not denied this privilege.
- Books, no doubt can have therapeutic effect on the disturbed minds of prisoners just like drugs may have on the body. This service must be extended to the inmates for a change for the better.
- Library materials must be provided to meet the multifaceted needs of the inmates, bearing in mind the fact that they come from different ethnic, cultural, social or linguistic backgrounds.
- Relevant books, non-book materials and internet services can all go a long way to making positive changes in emotionally disturbed behaviour.
- Professional librarians must be employed to oversee the prison libraries to provide leadership and the desired human resource services.
- Government must make adequate budgetary allocation for the sustenance of the libraries.

## **Conclusion**

The provision of libraries in the various prisons for the inmates' rehabilitation is non-negotiable. It is rather a matter of necessity. There is no gainsaying that a viable prison library system will impact positively on the inmates' functional literacy, thus, enabling them to function effectively in their daily lives. A good and functional prison library will improve their emotional well-being and help them develop healthy human relationship. Use of well organized prison library will lead to improved self esteem (rehabilitated being), increased involvement in learning and increased employment opportunities on release of inmates.

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# Managing Library Resources for Generational Use: Case Study of Two Federal Universities in Southwest, Nigeria

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## Introduction

Strategic planning and development of a library is guided mainly by the goals and objectives of the parent institution of which the library is a part. Library facilitates access to information for knowledge, education, and learning. Support research activities and programmes of the parent institution by offering proactive information services and store and preserve information of archival nature such as local traditions, customs, and locally generated process documentation report.

Library resources are in constant danger from number of enemies including environmental factors such as bad weather, hurricane, humidity, light, atmospheric pollution and virus. These factors may also encourage biological agents of book deterioration such as humans, insects, pests like cockroaches, beetles, termites, spiders and bookworms. Man is also a potential agent of deterioration and destruction of library resources either through mutilation, theft, mishandling, bad shelving as well as air pollution (Onadiran, 1986)

Modern libraries maintain resources that include not only printed materials such as books, periodicals, newspapers, and magazines, but also art reproductions, films, sound and video recordings, maps, photographs, microfiches, microfilms, CD-ROMs, computers software, online databases, and other media resources. In addition to managing resources in library buildings, modern libraries often feature telecommunications links that provide users with access to information at remote sites. The basic objective of a library is to collect, organize, preserve, and provide access to knowledge and information. In fulfilling this objective, libraries preserve a valuable record of culture that can be passed down to succeeding generations. Libraries are an essentials link in this communication between the past, present, and future. Whether the cultural record is contained in books or in electronic formats, libraries ensure that the record is managed, preserved and made available for later use (Clayton and Gorman, 2005)

The maintenance of links to resources on the web is essentially a task of good management. It involves planning ahead and taking deliberate steps to avoid the unnecessary removal or movement of document on the site. The persistence of links between resources and of links in resource discovery services is essential to ensure long-term public access to web-based materials. It is, therefore, an important aspect of the archiving and preservation strategies adopted for these resources (National Library of Australia, 2004)

Libraries and archives have always struggled against the physical destruction of their collections. Fires, floods, earthquakes and wars have damaged the holdings of countless libraries, destroying forever much of the recorded history of human civilization.

The slow decomposition of library materials is a universal problem. To ensure that library materials remain available to present and future generations of library users, libraries and archives engage in a variety of preservation efforts. These efforts include the conservation of original resources and the transfer of information from original resources to more durable formats like backups, Copy to DVDs and CDs (Jessup, 2008)

Proper care of library collections is necessary with a view to prolong its life. This requires preserving and protecting books against decay and deterioration. As preventive measures, dusting and cleaning of books, shelves and covering of computers and its accessories must be carried out on regular basis. Books must be exposed to adequate air and sunlight for a short time in case the library room does not get sufficient sunlight. Avoid keeping books in damp places; pest control treatment must be done on periodic basis (Dhawan, 2006)

Preservation does not simply happen on its own; a well thought-out plan must be drawn and managed. According to Fifth Law of Library Science "Library is a growing organism". Libraries acquire materials of all kinds continuously, and promote the use of these acquired resources. Hence more and more number of users wants to access these resources. As more and more number of users accessed these materials they are more likely to be damaged. To prevent this deterioration of library resources which may affect the further retrieval of the contents, we need to adopt an array of appropriate management Strategies.

Environmental conditions and methods of storage have a great influence on the preservation of library resources. Control of the environmental conditions and the provision of good storage conditions constitute the best preventive measures.

Preservation is the generic term, includes all activities associated with the maintenance of resources and the preservation of information content. This is in contrast with conservation, which refers to the physical items themselves in order to extend their useable life and restoration, which refers to damaged materials to bring to its near original condition (Plumber 2001)

There may be little concern about the management and care of library resources in most university libraries and for this reason there is need for a study to be undertaken in this area.

### **Objectives of the Study**

The main objective of the study is to determine an effective means of managing and preserving library resources for future use. The study aims to arrive at the following objectives:

1. To determine the best methods of managing library resources for future use,
2. To determine what steps are being taken to preserve the library resources for future generations of library users.

## Research Questions

1. What are the biological and physical agents of deterioration of library resources?
2. What are the steps taken to manage and preserve library resources for future generations of library users?

## Research Methodology

The population of this study covered the professional librarians and paraprofessional staff from University of Ibadan, Ibadan and University of Agriculture, Abeokuta. They were chosen because they have direct contact with all library resources in the library. The instruments used for data collection for this study were questionnaire. All questions were centered on how to managed and preserved library resources for future generational use. Thirty questionnaires were given out and twenty –Eight was returned, and found to be useful for the study. The data collected were verified and analyzed using sampling percentages.

## Data Presentation and Interpretation

This presents the result of the analysis in line with the research question/hypothesis postulate for the study in order to make a valid conclusion based on the stated problem for the study.

Table 4.1: Distribution of respondents by status

Status	Frequency	%
Librarian	17	60.7
Library officer	11	39.3
Total	28	100.0

The table above presents the distribution of respondents by status. According to the result of the analysis, 17(60.7%) of the respondents were librarian while 11 (39.3%) were library officer. This shows that majority of the respondents were librarian.

Table 4.2: Distribution by biological agents of deterioration

Biological Agent of Deterioration	Yes (%)	No (%)	Total (%)
Termite and Cockroaches	67.9	32.1	100.0
Termite and Silverfish	78.6	21.4	100.0
Rodents and termite	57.1	42.9	100.0
Man and rodents	60.7	39.3	100.0

The table 4.2 presents the distribution of respondents by the biological agent of deterioration in the library. According to the result of the analysis, 67.9 % of the respondents indicated that termite and cockroaches are biological agent of deterioration, 78.6%, 57.1% and 60.7% indicated termite and silverfish, rodents and termite, and man and rodents respectively.

Table 4.3: Distribution by physical agents of deterioration

Physical Agent of Deterioration	Yes (%)	No (%)	Total (%)
Moisture	53.6	46.4	100.0
Fire	64.5	35.5	100.0
Heat	60.7	39.3	100.0
Light	21.4	78.5	100.0

The table 4.3 presents the distribution of respondents by the physical agent of deterioration in the library. According to the result of the analysis, 53.6%, 64.5% and 60.7 % of the respondents indicated that moisture, fire and heat are form of physical agent of deterioration in the library. Moreover 78.5% of the respondents do not see light as physical agent of deterioration in the library.

Table 4.4: Method of pest control

Pest Control	Yes (%)	No (%)	Total (%)
Fumigation and poisoning	89.3	10.7	100.0
Integrated pest control	53.6	46.4	100.0
Mesh wire on window	57.1	42.9	100.0
Dusting and cleaning book	67.9	32.1	100.0
Venetian blind curtain	10.7	89.3	100.0

The table 4.4 presents the distribution of respondents by the type of pest control as indicated by the professional and paraprofessional librarian of academic library. According to the result of the analysis, 89.3%, 53.6%, 57.1% and 67.9% of the respondents were in support of fumigation and poisoning, integrated pest control, Mesh wire on window and Dusting and cleaning book. Moreover, 89.3% does not perceived Venetian blind curtain respectively as a means of library pest control

Table 4.5: preservation of library materials

Preservation Method	Yes (%)	No (%)	Total (%)
Air conditioner	75.0	25.0	100.0
Fan	53.6	46.4	100.0
Dusting /cleaning book	67.9	32.1	100.0
Library is design to allow free air	60.7	39.3	100.0

The table 4.5 presents the distribution of respondents on preservation of library materials. The result of the analysis shows that, in terms of air conditioner, fan, dusting /cleaning book and the design of the library to accommodate free air, the library were in cognizance to it as indicated by 75%, 53.6%, 67.9%, and 60.7% respectively whereas, 46.4% of the respondents does not see the use of either ceiling or standing fan as method of preserving library materials.

Table 4.6: preservation of e-library resources and database

Preservation Method	Yes (%)	No (%)	Total (%)
Backup	89.3	10.7	100.0
Copy into CDs & DVDs	89.3	10.7	100.0
Use of antivirus	76.8	21.4	100.0
Printing	25.0	75.0	100.0

The table 4.6 presents the distribution of respondents on preservation of e-library resources and databases. The result of the analysis shows that, e-library resources were been preserved an manage through backup, copy into CDs & DVDs as well as the use of antivirus as indicated by 89.3%, 89.3%, and 76.8% respectively whereas, 75.0% of the respondents does not see printing as a means of preserving e-library materials/resources

Table 4.7: other protective method against physical agent of deterioration

Protective Method	Yes (%)	No (%)	Total (%)
Smoke detector	60.7	39.3	100.0
Sprinkler	10.7	89.3	100.0
Carbon dioxide	-	100.0	100.0
Fire extinguisher	89.3	10.7	100.0
Heat sensor	53.6	46.4	100.0

The table 4.7 presents the distribution of respondents on other protective method against physical agent of deterioration. The result of the analysis shows that, Smoke detector, fire extinguisher and heat sensor had been identified as indicated by 60.7%, 89.3%, and 53.6% respectively. Carbon dioxide and sprinkler are not considered as protective method as indicated by respondents above.

Table 4.8: Measures taking against mutilation and theft

Measures	Yes (%)	No (%)	Total (%)
Theft Detector	82.1	17.9	100.0
Close Monitoring circuit	57.1	42.9	100.0
Security surveillance	89.3	10.7	100.0
Punishing of offender	64.3	35.7	100.0
Exhibiting mutilated materials	60.7	39.3	100.0
Campaign against mutilation and theft	78.6	21.4	100.0

The table 4.8 presents the distribution of respondents on the measure taking against mutilation and theft of library materials / resources. According to the table above, the best method to be taking include: Security surveillance, Theft detector, Campaign against mutilation and Punishing of offender as indicated by 89.3%, 82.1%, 60.7%, 78.6% and 64.3% respectively.

## Discussion of Findings

The major findings of this study are summarized as follows

- The major biological agents of deterioration of library resources as revealed by the study are Termite, Silverfish, Cockroaches, Rodents and Man.
- The study also reveals physical agents of deterioration as Fire, Heat, and Moisture.
- Another finding of this study reveals that fumigation and poisoning of collections, Dusting and regular cleaning of books, Venetian blind curtain and Provision of air conditioner/fan can control pest and preserved library resources for future use.
- Other finding of this study for preserving e-library resources and database are Provision of backups, Copy into CDs and DVDs, Use of Antivirus.
- The study finally revealed provision of Fire extinguisher, Smoke detector, Theft detector, Security surveillance, Punishing of offender, Exhibiting mutilated materials and Campaign against mutilation and theft of library resources as a means of managing and preserving library resources for generational use.

## Recommendations

The following recommendations are derived from the findings of this study.

- Library management should provide for adequate funding to manage and preserve an effective library resource for future use.
- Management should also recruit and train qualified staff for the maintenance of the library resources for future use.
- The libraries should also embark on frequent and constant fumigation of their resources.
- Libraries should acquire modern equipment as well as maintain the existing one.

## Conclusion

The university libraries are to managed and preserved their resources for future use, they must prevented and controlled all physical and biological agents of deterioration of library resources so that the next generation of library users can have ease access to their resources. Enough attention should be given to preservation of library materials including library e-resources and databases.

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## **The Use of Information and Communication Technology in Agricultural Research in Nigerian Universities**

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### **Introduction**

Information and Communication Technology (ICT) is a merger of computing and telecommunication technologies for information acquisition, storage, retrieval, and dissemination.

ICT has become a global tool often used by individuals, organizations, governments and intergovernmental organizations for personal or official activities. Its application cut across all fields of human endeavour like medicine, commerce, engineering, architecture, education, library services, and agriculture. ICT is also known as Information Technology (IT). According to Aina (2004), IT is an omnibus term that combines computer and telecommunication technology; hence, it is sometimes called Information and Communication Technology (ICT). It is concerned with the technology used in handling, acquiring, processing, storing, and disseminating information

The computer is useful for processing information while the telecommunication facilities provide means for information communication or transfer using networks. However, for computers to be able to communicate with one another there has to be a network which provides a link, and when this link is across the globe, an international network called Internet results. The Internet is a connection of millions of computers all over the world by networks (Ogbomo, 2004, Ibegwam, 2002). The availability of the Internet as a major component of ICT has improved access to information, by information users tremendously.

The library is a key player in education, research, and information provision; it has thus been in the forefront in ICT application to its services. Libraries are repositories of information in whatever format it may appear. A library is primarily set up to acquire,

organize, store and make accessible to users within the quickest possible time all forms of information materials which they require (Nwalo,2003). In the university, the library plays a major role in making the university achieve its objectives of teaching, research, and community service through the provision of information resources for undergraduate instruction as well as postgraduate research needs (Ifidon, 1999). Libraries use ICT for information acquisition, processing, and provision to library users. Madu and Adeniran (2005) summarized the values of ICT to libraries and library users to include better access to information, encouraging library co-operation, encouraging resource sharing, efficient and effective delivery of service and providing access to international databases.

ICT is a convenient tool for research activities. According to Ifidon and Ifidon (2007), research is man's systematic and empirical investigation into existing but hidden elements in nature with a view to unearthing, restructuring, and explaining such elements for the purpose of development. Specifically, it is a human activity whereby answers are sought, with as great an approximation of truth and accuracy as human knowledge makes possible, to basic or fundamental questions concerning the phenomena of the universe. This comprehensive definition cuts across all fields of human pursuit like education, medicine, engineering, and agriculture. According to Aina (2002), research is of two main types; these are basic/pure research and applied research. Basic research involves extending the frontiers of knowledge in order to have a better understanding of the environment. It aims to discover information that may be applied in the future and it attempts to add to existing knowledge. This type of research leads to generalizations, principles, and the development of theories. It may not have immediate practical application but it will eventually be useful in future. Applied research on the other hand involves providing solutions to a practical problem or an immediate problem. It aims at improving a process or a product.

Agricultural research therefore involves investigations into agricultural problems for the purpose of finding solutions to the problems. According to Loebenstein and Thottappilly (2007), agricultural research can be broadly defined as any research activity aimed at improving productivity and quality of crops by their genetic improvement, better plant protection, irrigation, storage methods, farm mechanization, efficient marketing, and a better management of resources. The mission of agricultural research has always been to improve agricultural practice for the purpose of feeding the ever increasing global population.

The study by Adomi, Okiy and Ruteyan (2003), had shown that members of the academic community especially lecturers are major users of the Internet. UNESCO reports (2003), reveals that lecturers are able to break away from professional isolation, with ICTs, they can easily connect with lecturers from other countries and with sources of teaching materials. UNESCO (2003) further affirms that researchers are no longer faced with a lack of information but a glut of information. Data sharing, peer review, and developing a network of contacts are no longer constrained by distance as access to email, web based file and data sharing, and web logs become ubiquitous.

Agricultural sciences' lecturers are not left out in these benefits. There are agricultural science databases on the Internet, such as Access to Global Online Research in Agriculture (AGORA), Agricultural Online Access (AGRICOLA), and Agricultural Information System (AGRIS), that provide current research information for agricultural scientists across the globe. Furthermore, the facilities offered by the Internet like, www, e-mail, and the file transfer protocol could be explored by agricultural scientists in the universities to improve their research and publish their research findings.

As stated by Wikipedia (2008), agricultural sciences include research and development on: Production techniques, improving agricultural productivity in terms of quantity and quality, transformation of primary products into end-consumer products, prevention and correction of adverse environmental effects, theoretical production ecology, relating to crop production modeling, prevention and correction of adverse environmental effects and food production and demand on a global basis. In the university system, there are specialists in these various subject areas who are involved in teaching, research and community service. Researches in the various fields of agriculture are imperative to the development of any nation and the world in general in view of the strategic importance of food to man and its contribution to the economy of many nations.

However, it is worrisome to note that Nigerian universities are lowly rated in terms of research within Africa and the world over. One then begins to wonder if the university libraries are no longer functioning to provide the needed support for academic staff to improve their research, or if ICT facilities are not used to further research activities as is the case in other countries. It is against this backdrop that this study examines the use of ICT for agricultural research by academic staff in Nigerian federal universities. It specifically examines the types of ICT facilities used, their benefits and constraints on their utilisation.

### **Research Questions**

The following research questions guided the study:

1. What are the types of ICT facilities used by lecturers for agricultural research in Nigerian federal universities?
2. What are the benefits of ICT use for agricultural research by lecturers in Nigerian federal universities?
3. What are the constraints to ICT utilization for agricultural research by lecturers in Nigerian federal universities?

### **Literature Review**

The application of ICT to agricultural research has attracted comments and several publications across the globe, many of which concentrated on review of programmes or established systems. According to Salau and Saingbe (2008) Information technology is a key to agricultural development. Consequently agricultural researchers, trainers, extension workers, farmers and students must have easy and uninterrupted access to ICT facilities in their immediate environment. They studied 3 tertiary institutions and the ADP in Nasarawa State in 2006 to determine the accessibility and level of utilization of ICTs by agricultural scientists and extension workers. A sample of 45 Agricultural researchers and 45 extension workers was randomly selected for the study using a set of questionnaire. Data analysis was through the use of descriptive statistics, and linear regression model. The findings revealed that researchers had 87% access to ICT facilities while extension workers had 66% access. On the level of utilization of ICTs for agricultural communication the researchers scored 84% while extension workers scored 70.3%. The regression analysis further revealed that level of education positively influenced the level of utilization of ICTs while years of working experience had negative influence. The key problems militating against the use of ICTs in the area were poor access to ICT facilities, lack of computer knowledge, low income and poor power supply. It was recommended that agricultural organizations should install all necessary ICT facilities in their establishments and provide training opportunities for their staff. Constant power supply to both urban and rural communities should be considered a fundamental human right and treated as such.

According to May, Karugia and Ndokweni<sup>1</sup> (2007), effective agricultural development requires access to information on all aspects of agricultural production, processing and marketing and ICT is already showing the potential to play an important role in the delivery of this information to this sector in both developed and developing countries. In most cases, the base technology is universal, rather than being specific to agriculture, and hence usage evolves from existing designs and practices. The FAO distinguishes five broad categories through which ICT is used in the agricultural sector. These are technical and economic development for agricultural producers; community development; research and education; small and medium enterprise (SME) development; and media networks (FAO, 2006). Furthermore, unlike most other sources of information, ICT allow information accessibility at any time during the week or day. At the level of agribusiness, the value to a business of having access to ICT is potentially immeasurable.

Maoz (2007), reviewed the European Research Areas – Network and reported that ICT supported collaboration in agricultural research can be very productive with a high value added. He stated that many barriers stand in the way of coordinating national research programs adding that research managers are constantly frustrated when realizing that nationally funded research is duplicated in other countries, which in a sense is "wasting" someone's scarce national research funds. Adoption of ICT to alleviate coordination constraints is a unique challenge and a specific public concern with regional, national, and international strategic significance. ICT adoption can be catalytic as it transforms the way agricultural researchers conduct their research, innovate, and cooperate among themselves, and with the wide range of users of agro-technology.

Singh (2006), reported the success stories of agricultural information systems in the Asia-Pacific in which he stated that agricultural extension systems since the 1990's in the region have been significantly weakened and reduced in their effectiveness due to a variety of reasons primarily reduced funding to agricultural development when economic development policies shifted. Investments in use of ICT in extension by NARS consequently very limited. However, in recent years, agriculture is regaining attention. Most focus is in enabling smallholder farmers, the majority in the farming communities of the region participate more equitably in national, regional, and global markets. Several countries in Asia are seeing very innovative use of ICT in agricultural and rural development. He stated further that, ICTs are transforming conventional agricultural extension. A common learning from these ICT enabled initiatives for agricultural development has been that farmers' information needs to be satisfied through use of ICT are for market related information including price trends, accessing input and support services and solving individual and community agricultural problems, especially diagnosis of disease and pest problems and getting solutions to them. The type of services that use of "new" ICT can provide include call centres, help desks, web based question and answers, frequently asked questions, e-mail based electronic discussion lists and on-line "communities of practice". This is leading to transformation of how ICT use is also transforming through extension, with the focus in rural development on universal access.

In Bangladesh, Alam and Ahmed (2008), reported efforts of the government in the application of ICT: Geographic Information System (GIS) for agricultural development. Through this project, a computerized land information system for Bangladesh was established. It includes land resource inventory, crop viewer, climatic map, drought mapping, and crop pattern suitability model. They reported further that NARS scientists have developed fifty-five new technologies. Database of the new technologies includes name and address of the scientist, test location, where being implemented, yields, expected return, etc. Agricultural information centre (AIC) of BARC provides Library service to all

agricultural scientists, Internet search opportunities, CD CD-ROM search facilities and National Agricultural Information System (NAIS) database search service.

Gelb and Levanon (2008), made a case study of Israel in the management of public funded research and affirmed that the traditional management methodology to manage Research & Development (R&D) in agriculture was and is supported by use of basic Information and Communication Technologies (ICT) -skillfully adapted and employed to do "traditional" clerical chores. They stated that innovative research management methodology supported by ICT involves coordinating interactive knowledge accessing, cross referencing and integration of ever expanding and varied data sets, real time client feedback of research results and product implementation, maintaining geographically-neutral collaboration, synchronizing long term goals with resource allocation priorities and much more. In some cases, ICT specifics dictate R&D management methodology and practice. Exploiting innovative ICT supported management practices can considerably improve the efficiency of research, research results, and their dissemination and eventually result implementation. This efficiency can be expressed via an increase in general agricultural productivity, product quality, and technological progress. They gave some changes and/or improvements enabled by ICT Adoption to include: On line and real time addressing of large audiences efficiently via the Chief Scientist's Portal and individual e-mail contacts. Both in turn facilitate online accessing of relevant information and individual contacts as and when required; Computerized handling of the research proposals enable improved and efficient decision making.

In Makerere University, Uganda, efforts are being made to **develop and maintain** an advanced technology environment in order to support and enhance the **teaching, research, and learning, service, & administration** activities of the Faculty of Agriculture community. The **ICT** Unit of the Faculty of Agriculture in collaboration with the Directorate of ICT Services (**DICTS**) is responsible for support, maintenance, and improvement of ICT technology in the Faculty of Agriculture. The Unit handles all issues concerning ICT and offers Skills Training in ICT focusing on Agriculture in the information age. It is the mission of the ICT Unit to develop and maintain an advanced technology environment in order to support and enhance the teaching, research, learning, service, and administrative activities of the Faculty of Agriculture community

Mwatawala (2005), discussed the potential for utilization of Information and Communication Technology (ICT) in integrated Pest Management (IPM) in Tanzania and concluded that there is a great potential for Tanzanian farmers to use ICT in IPM. There is an ICT policy, which shows strong government commitment to support ICT programmes in rural areas, as well as a pilot project for the utilization of ICT in rural areas. According to him what is required now is the implementation of the IPM policy with emphasis on the provision of information to the majority in rural areas.

## **Methodology**

Descriptive survey design was used for the study. The population of this study comprised the academic staff in the faculties/schools of agriculture in the twenty-one federal government owned universities in Nigeria that run courses in agricultural sciences. This stood at 1,927 as at 2008/2009 academic session. The stratified random sampling technique was used to select twelve federal universities, two from each of the six geo-political zones. In each of the twelve universities selected, 40% of the lecturers in each of the six disciplines were randomly sampled to give a total sample of 471 lecturers in the six major subject areas in faculties/schools of agriculture. Structured questionnaire rated on a 4

point scale was used as instrument for data collection. Data collected were analysed by using mean score and standard deviation.

## Findings

### Research Question 1

What are the ICT facilities used by lecturers in agricultural sciences for research in Nigerian federal universities?

Table 1: Mean ratings and standard deviations of respondents on ICT facilities used for agricultural research

S/N	Items on ICT facilities used for agricultural research		SD	Decision
1	You use computer to process your research work	3.44	.73	Agree
2	You use statistical packages in the computer for research	3.12	.77	Agree
3	You use database packages for research	3.00	.84	Agree
4	You use computers for data analysis	3.32	.74	Agree
5	You use CD-ROM for literature search in your research	2.77	.94	Agree
6	You use the Internet to get up to date literature for research	3.47	.74	Agree
7	You use e-mail for research purposes	3.19	.80	Agree
8	You use electronic journals to publish research reports	2.94	.93	Agree
9	You use on-line databases for research	3.06	.79	Agree

The results in table 1 indicate that the responses of respondents agreed with all the items regarding ICT facilities used for agricultural research. They agreed with item 1, (mean, 3.44) that the computer is used for research, item 2(mean, 3.12) shows that the statistical package is used for research, item 3 (mean, 3.00) shows that database packages are used for research and item 4 (mean, 3.32) show agreement with computer use for data analysis. The table also showed that item 5 (mean, 2.77) indicate agreement with CD-ROM use for literature search and item 6, (mean, 3.47) indicate agreement with the use of Internet for literature search. Item 7(mean, 3.19) indicate that respondents agreed to using e-mail for research purposes, while item 8(mean, 2.94) shows that respondents agreed to the use of electronic journals to publish research results, and item 9(mean, 3.06) also agreed to the use of online databases for research.

### Research Question 2

What are the benefits of ICT use for agricultural research in Nigerian federal universities?

Table 2: Mean ratings and standard deviations of respondents on benefits of ICT use for agricultural research

S/N	Items on benefits of ICT use for agricultural research		SD	Decision
1	Literature search is made easier for you with the Internet	3.40	.81	Agree
2	You have been able to open new areas of research due to Internet use	3.07	.86	Agree
3	You now have a wider access to foreign journals as a result of Internet use	3.57	.70	Strongly agree
4	You send your questionnaires on-line using e-mail	2.22	1.06	Disagree
5	You receive your completed questionnaire online by e-mail	2.18	1.05	Disagree
6	You now send your papers by e-mail to editors for publication in journals	3.33	.79	Agree
7	You now register for variety of research information in your e-mail box	3.12	.83	Agree
8	You now receive variety of research information in your e-mail box	3.16	.78	Agree
9	You share information with colleagues through e-mail	3.23	.74	Agree
10	Analysis and interpretation of your data is made easier with the computer	3.50	.70	Strongly agree
11	The graphical presentations in your research publications are of higher quality using computers	3.36	.76	Agree
12	Your journal publications have improved tremendously since you started using agricultural databases	3.08	.84	Agree
13	You find enough research information in electronic resources	3.17	.76	Agree
14	You now read journals on-line	2.84	.90	Agree
15	Your reference queries are answered electronically	2.40	1.07	Disagree
16	You now experience less errors in your research papers due to ICT use	3.38	.74	Agree

The results in Table 2 indicate that respondents have varied opinions about the benefits of ICT to agricultural research. In item 1 (mean, 3.40) they agreed that literature search is made easier with the Internet, in item 2 (mean, 3.07) they agreed that they have been able to open new areas of research due to Internet use, and in item 3 (mean, 3.57), they agreed with access to foreign journals. In item 4 (mean, 2.22) they disagreed that they send their questionnaire online and item 5 (mean, 2.18) they disagreed that they receive completed questionnaire online.

The table also indicated that respondents also agreed with items on benefits derived from e-mail use in items 6, 7, 8, and 9. In item 6 (mean, 3.33) they agreed that they are now able to send papers to editors for publication by e-mail, in item 7 (mean, 3.12) they are able to register for variety of research information in e-mail box, in item 8 (mean, 3.16) they agreed that they receive variety of research information in e-mail box, and in item 9 (mean, 3.23) they agreed that they share information with colleagues through e-mail. In item 10 (mean, 3.50) respondents agreed that analysis and interpretation of data is made easier with the computer, in item 11 (mean, 3.36) they agreed that the graphical presentations in research publications are of higher quality using computers and item 12 (mean, 3.08) indicated agreement that journal publications of respondents have improved tremendously since they started using agricultural databases. On item 13 (mean, 3.18) they agreed that

they find enough research information in electronic resources and in item 14 (mean, 2.84) they agreed that they now read journals on-line.

In item 15 (mean, 2.40) respondents disagreed that they now enjoy electronic reference service, while item 16 (mean, 3.38) shows agreement that respondents now experience less errors in research papers due to ICT use.

#### Research question 4

What are the constraints of ICT utilization by lecturers for agricultural research in Nigerian federal universities?

Table 3: Mean ratings and standard deviations of respondents on constraints of ICT utilization for agricultural research

S/N	Items on constraints of ICT use for agricultural research		SD	Decision
1	You lack access to ICT facilities	2.07	1.01	Disagree
2	You are not ICT literate	1.96	1.06	Disagree
3	The cost of using commercial cyber café is high	2.87	1.02	Agree
4	There is no up to date CD-ROM	2.56	.95	Agree
5	You don't have time to spend in the café	2.58	1.03	Agree
6	There is unstable power supply	3.48	.88	Agree
7	There is always poor internet connectivity	3.14	.89	Agree
8	You don't have subscription to agricultural databases	2.87	.90	Agree
9	Most agricultural databases are commercialized	2.86	.86	Agree
10	There is no enough relevant resources on free databases	2.70	.95	Agree

There were two levels of opinions regarding the constraints to ICT utilization for agricultural research by respondents. The respondents disagreed with item 1 which is on lack of access as constraint to ICT utilization having a mean of 2.07 and item 2 with a mean of 1.96 which relates to not being ICT literate. Respondents however, agreed that the cost of using commercial cyber café is high with a mean of 2.87 as constraint to ICT use for agricultural research in item 3, and that there was no up to date CD-ROM as found in item 4 having a mean of 2,56. Furthermore, respondents agreed to item 5 that lack of time to spend in the café is a constraint to ICT utilization for research with mean 2.58 and item 6 with mean at 3.48 which is unstable power supply. The other constraints respondents agreed to were item 7 poor Internet connectivity at mean 3.14, item 8 lack of subscription to agricultural databases at 2.87 mean, item 9 most agricultural databases are commercialized with mean at 2.86 and item 10 there were no enough relevant resources on free databases with 2.70 mean.

#### Discussion

Research Question 1 focussed on ICT facilities used for research by lecturers for agricultural research in Nigerian federal universities. From observations, it was revealed that many lecturers in the faculties/schools of agriculture owned a laptop and browse by wireless networks. Furthermore, cybercafés were located in many faculties/schools of agriculture to create Internet access for academic staff which is supplemented by private cybercafés located close to campuses. CD-ROM service was more noticed at the University of Ibadan main library, Federal University of Technology, Owerri Library and Kashim Ibrahim Library,

(ABU, Zaria). Further findings through the research questionnaire showed that all ICT facilities named in this study were used for agricultural research. The computer and its accomplishing packages the statistical package and database packages were used for research especially computer used for data analysis. The CD-ROM and the Internet were used for literature search. E-mail was used for research purposes, while electronic journals were used to publish research findings. Online databases were used for research. These findings confirm the findings by Omotayo & Fadehan (2007) that a high percentage of academic staff have access to both the computer and the Internet; and findings of Adomi, Okiy and Ruteyan (2003), that members of the academic community especially lecturers are major users of the Internet.

Research Question 2 dealt with benefits of ICT use for agricultural research in Nigerian federal universities. The findings showed that academic staff have access to foreign journals with the use of ICT thereby reaffirming the position of Omekwu (2002), that on-line and CD-ROM database systems have expanded users' access to the most current information. The Internet, according to Owoeye (2005) has made it possible for librarians to network and provide access to remote electronic databases, making in-roads to a wide range of services and products available to information users. Further findings indicated that analysis and interpretation of data is made easier with the computer. The study also found that lecturers in agricultural sciences hardly sent and received questionnaires on-line using e-mail in the conduct of their research. They did not benefit from electronic reference services. The findings indicated that literature search was made easier for lecturers of agricultural sciences using ICT. They have also been able to open new areas of research due to Internet use as found by the study. This is in agreement with findings by Oduwole (2004) that the use of the Internet for academic research by Agricultural Scientist has improved their research output. The findings also showed that lecturers of agricultural sciences sent papers to editors for publication by e-mail, were able to register for variety of research information in e-mail box, received variety of research information in e-mail box and shared information with colleagues through e-mail.

Further findings showed that the graphical presentations in research publications are of higher quality using computers. Journal publications of agricultural sciences lecturers have improved tremendously since they started using agricultural databases. It was indicated that enough research information is obtained in electronic resources and journals are read on-line as indicated by findings of this study. Finally agricultural sciences lecturers now experience less error in research papers due to ICT use. The benefits derived from the findings can be articulated in line with the statement of Anasi (2005), that Information and Communication Technologies provide libraries immense opportunity for accessing and retrieving information resources without the restriction of time, space, or format, through on-line database searching, CD-ROM searching, e-mail services, telefacsimile services, Internet services, document delivery services, networking, Digitalization, and virtual library. Breakthroughs and development in ICT have increasingly reshape the way libraries and librarians access, retrieve, store, manipulate and disseminate needed information to their actual and potential users.

Research Question3 focused on constraints to ICT use by lecturers in agricultural sciences in Nigerian federal universities. It was found that access and ICT literacy were not constraints to use. Meanwhile, the high cost of using commercial cyber café, lack of up to date CD-ROM and lack of time to spend in the café were constraints to ICT utilization for research. The other constraints found were poor internet connectivity, lack of subscription to agricultural databases, commercialization of agricultural databases, lack of enough relevant resources on free databases and above all irregular power supply.

## Conclusion

Based on the findings of the study, it could be concluded that lecturers in agricultural sciences in Nigerian universities have embraced ICT and are using it for research. Some of the facilities used are computer, statistical packages, database packages, CD-ROM, the Internet, e-mail and online databases. Lecturers derive benefits from the use of ICT for research which include opening new areas of research, better analysis and interpretation of data, current literature, online publication of articles and easy transfer of research findings to editors for publication in journals. Academic staff face some constraints on the utilization of ICT for agricultural research in Nigerian universities. Some of the constraints are high cost of using commercial cyber café, lack of up to date CD-ROM for current literature search, lack of time to spend in the café, unstable power supply and poor Internet connectivity.

## Recommendations

Based on the findings of the study and conclusions reached, the following recommendations are made:

1. Universities should improve their ICT infrastructures and the larger part of its bandwidth should be given to the library to reduce the cost of using commercial cybercafés for academic staff.
2. University libraries should be well funded so that they can subscribe to outstanding databases that will meet the needs of academic staff for research.

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## **Publishing in Indigenous Nigerian Languages: A Study of Trends**

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### **Introduction**

There have been calls for an interface between indigenous channels of communication and adopted channels. Wilson (2006:7) proposed strategies for employing indigenous communication to solve environmental problems with emphasis on print and oral communications. Though he was silent on what specific languages to employ, the fact that he proposed communication messages aimed at local communities, churches and agriculturists, implies that indigenous languages will be used.

Salawu, (2004a:3) in a study that centred on the readership of indigenous language newspapers in the Yoruba speaking area of Nigeria, found that only 29.5% of 450 respondents read Yoruba language papers regularly. He also called for more attention to be given to indigenous language publications in these words: "if indigenous language newspapers (going by their perceived potentials for informing and mobilizing people for development efforts) must survive, then they must be given a chance, by being made patronizable". His recommendation, which forms part of the background to this study, drives home the point:

Government and development agencies/non-governmental organization should consider the promotion of a reading culture, especially in indigenous languages, as a development programme and this should be pursued vigorously ...encouragement should be given to creative writing and publishing in indigenous languages.

In his study of language and dialect in rural broadcasting, Owuamalam (2005) advances the argument for indigenous language communication beyond mere emphasis and general promotion. He argues that communication would be more effective in specific dialects, not just languages. This, according to him, facilitates the generation of desired meaning within the context of use, so that interpretation becomes universally shared by the communicators in a given environment.

### **The Problem**

From the foregoing, the problem of this study is to investigate the progress being made in the direction of publishing books, magazines, and newspapers in indigenous Nigerian languages with emphasis on trends and sustainability.

## **Research Questions**

The following questions were posed to guide the study:

1. What is the trend in the publishing of books in indigenous languages in Nigeria?
2. What is the trend in the publishing of newspapers and magazines in indigenous Nigerian languages?
3. What is the trend in the translation of English language books into indigenous Nigerian languages?

## **Objective of the Study**

The central objective of this study is to identify the direction in which progress is being made with regard to indigenous language publishing in Nigeria. Emphasis is laid on book publishing, magazine publishing, newspaper publishing and translation into indigenous languages.

## **Theoretical Framework and Literature**

Theoretical Framework: The study is anchored on the framework of the development communication theory. This theory, according to Mercado (1992:16) is "a system of communication with emphasis on the planned use of communication source", channels and techniques to gain multi-sector support in attaining and sustaining national development goals. In the context of this study, it is the planned use of indigenous language publications to attain and sustain national development goals in a developing nation with people from diverse ethnic and language backgrounds.

With emphasis on presentational style and language use, Adesola (2004) pointed out that some local news broadcasts and (by implication) publications are only translations from the English language bulletin or publication. The dexterity of the translator, whether print or broadcast, impacts on the quality of communication because much is dependent on the translator's ability to translate faithfully from the source language (English) to the receptor language. This angle calls attention to the need for translation skills if the numerous materials produced or received in English would be transmitted to or published for the greater majority of Nigerians who feel at home only when communicating in indigenous languages. The question then is, are there efforts being made to localize English, French and other foreign language publications by way of translation?

The market for indigenous language publications appears to be growing. The education policy which makes the study of at least one indigenous language at primary and secondary levels seems to encourage the reading, writing and translating of such languages. An idea of the size or potential size of the market is given by Obidiegwu (2006). He stated that there are 22 million pupils in primary schools and 10 million students in Nigerian secondary schools. If each of these 32 million scholars would be required to buy a copy of the recommended text for an indigenous language, the market must be a huge one running into billions in naira terms.

There are, however, some challenges that confronting the indigenous language publishers of books, magazines and newspapers. The most prominent is the multiplicity of indigenous

languages many of which are not developed. Both Imoke (2006) and Orimalade (2006) indicate that there are 400 indigenous languages spoken in Nigeria. But the Bible Society of Nigeria, an organization with a goal to translate the bible into all Nigerian languages, states that "Nigeria has 500 languages" (Translation@<http://biblesociety-nigeria.org/index.php?>)

In fact Imoke (2006) categorized them under three classes as developed, developing and under-developed languages. Developed languages, according to him, are those with orthographies, standard written forms, large bodies of written materials, stabilize and decimalized counting systems and large population of speakers comprising both natives and people who acquire them as necessary second languages in their daily activities. Examples include Hausa, Igbo and Yoruba.

Developing languages are those in the process of acquiring or developing such characteristics associated with the developed ones while the under-developed ones are those spoken by a few and mainly spoken in their ethnic localities.

Examples of developing languages in Nigeria include Edo, Urhobo, Igala, Tiv, Efik, Ibibio, Izon, Kanuri, Ffulde and Nupe. The remaining 387 are under-developed and so may not be considered for large-scale commercial publishing. The market may not after all be as large as 32 million readers. But it is important to know that this could be viewed as the size of the potential market.

There is an international dimension to the discourse on indigenous language publishing. According to Fafunwa (2006) UNESCO has, for the past fifty years, been promoting the use of mother tongue as a medium of instruction. The foregoing is a pointer to the fact that indigenous language publishing for both formal educational instruction and leisure reading of newspapers and magazines is a development we can no longer ignore. Also from a global perspective, it might be appropriate to consider what other nations are doing with regard to indigenous language publishing. For instance, Mabawonku (2006) points out that the South African government publishes an indigenous knowledge system newsletter which is available online. Publishing online helps them to overcome the problems of cost and minority or developing languages. At the same time, it thrusts up the problem of publishing on the internet when the language is not English, French or German, which is beyond the scope of this study.

Obafemi (2005:75) admitting that "the language question is dominant in writing and publishing" argues that it is wrong for leading Nigerian writers to continue to write in English. But he failed to address the issue of leisure reading culture which is almost non-existent among the millions who can read English, not to talk of the thousands who can read only in the indigenous languages. He however made the point that literacy, reading culture and ready minds are pre-conditions for publishing indigenous languages, be it book, magazine or newspaper.

The mention of those who can read only indigenous languages draws attention to Emejulu's (2004) suggestion that folk media or community media should be considered in any possible interface of indigenous and adopted media. The problem with this position is the fact that much of what we know as folk media may not be amenable to encoding or written form semiotic and iconographic communication may, however, be feasible as print and on the internet. But this can only be effective when the target audience has really adopted the necessary technologies.

In a study of literacy and learning in Yoruba newspapers, Salawu (2004) found that 4.9% of items in selected Yoruba newspapers centred on literacy and education. His finding seems to support the arguments of scholars who think that publishing in indigenous languages should be pursued for educational purposes through books and magazines. Obafemi (2006: 77) put it this way: "The sad truth is, many of us are neither proficient nor competent in the grammar and structures of our mother tongues. Many of us simply cannot write in our own languages".

The result is that very few of Nigerian students show interest in indigenous language-based subjects that are not compulsory. For instance, Uzochukwu (2006:28) reports that indigenous creative writers are highly discouraged by the number of senior school certificate examination candidates that sit for literature. The following table constructed from his is self explanatory:

Subject	1996	1997	1998
1 Yoruba literature	1532	165	979
2 Hausa literature	989	1208	1035
3 Igbo literature	152	187	89
Total			

None of the languages could take up 4000 copies of literature published by many authors in any of the years. No such author would be encouraged to write more.

### **Methodology**

The researcher examined official records and publications of four selected organizations purposively selected because of their manifest activities and interest in indigenous language publishing and surveyed 48 newsstands in Lagos. The selected organizations are:

1. The bible society of Nigeria, an organization established to, among other functions, translated the bible into indigenous Nigerians Languages.
2. Nigerian Publishers Association, an association in the forefront as change agent in the publishing sector.
3. Deeper Life Bible Church, an organization that publisher one of the widest circulating magazines in Africa and translates it (*Christian women mirror*) into several indigenous languages.
4. Newspaper Proprietors Association of Nigeria, an umbrella body for newspaper and magazine publishers.

Activities of the selected bodies are nationwide, which implies that the results of the study may be applied across the 36 states of Nigeria.

## Analysis of Data

RQ1. What is the trend in the publishing of books in indigenous Nigerian languages?

Table 1: Titles published in Foreign and Indigenous Languages, 1996-2002.

SN	Language	Nurs/Primary	Secondary	Tertiary	Total	%
	Efik	5	2	0	(7)	0.68
	Edo	0	1	0	(1)	0.097
	Hausa	15	27	0	(42)	4.08
	Ibibio	4	4	0	(8)	0.77
	Igbo	23	18	1	(42)	4.08
	Yoruba	19	80	8	(107)	10.41
	Total	66	132	9	(207)	20.15
	French	17	28	1	(46)	4.47
	English	49	49	676	(775)	75.46
	Total	66	77	677	(1027)	100

Source: NPA

The table shows that 1027 titles were published for Nursery, Primary, Secondary and the tertiary levels. Out of this number 820 were English and French while 207 or 20.47% were published in all the six indigenous languages combined. A breakdown shows that Yoruba, with the highest number of publications contributed only 107 titles or 10.41% to the total, followed by Igbo and Hausa with 42 or 4.08% each. Edo, Efik and Ibibio contributed less than ten titles each.

It is noteworthy that none of the indigenous language titles was a translation from any of the English or French titles. The implication of this is that the idea of teaching these subjects in indigenous language is not catching on, and that the market for indigenous language publications probably does not justify any such ventures.

RQ2. What is the trend in the publishing of newspapers and magazines in indigenous languages?

Table 2: Newspapers in indigenous language and their current status

SN	Yoruba Newspapers	Current status	Life span
1	<i>Iwe Irohin</i>	Defunct	1859-1867
2	<i>Eko Akete</i>	Defunct	NA
3	<i>Eko Igbeyin</i>	Defunct	NA
4	<i>Iroyin Yoruba</i>	Moribund	1945-Date
5	<i>Gboungboun</i>	Defunct	1970-1992
6	<i>Isokan</i>	Defunct	1980-NA
7	<i>Alaroye</i>	Circulating	NA
8	<i>Yoruba Ronu</i>	Defunct	NA
9	<i>Iroyin</i>	Defunct	NA
10	<i>Obalonike</i>	Defunct	NA
11	<i>Ajoro</i>	Defunct	NA
Igbo Newspapers		Current status	
1	<i>Ogene</i>	Circulating	
2	<i>Anyanwu</i>	Defunct	
3	<i>Udoka</i>	Defunct	
Hausa Newspapers		Current Status	
1	<i>Gaskiya Ta Fi Kwabo</i>	Defunct	
2	<i>A1-Bashir</i>	Defunct	
3	<i>A1-Ahran</i>	Defunct	
4	<i>Taura rura</i>	Defunct	
5	<i>Jagora</i>	Defunct	
6	<i>Aminiya (print and online)</i>	Circulating	

Source: NPAN and Newsstands

The table indicates that out of eleven Yoruba language newspapers published since 1859, only two are in circulation, one out of three Igbo language newspapers is in circulation while one of six newspapers published in Hausa language is in circulation. Others are either defunct or moribund.

Table 3: Indigenous language magazines and their current statuses

S/N	News Magazines	Current Status	Life Span
1.	<i>Unwana Efik</i>	Defunct	NA
2.	<i>Obupong Efik</i>	Defunct	NA
3	<i>Akede</i>	In circulation	NA
4.	<i>Alariya</i>	In circulation	NA
5.	Religious Magazines	In circulation	NA
.	Yoruba Translation of <i>Christian Women Mirror (Digi)</i>	In circulation	NA
6	Igbo translation	In circulation	
7.	Hausa translation	In circulation	
	Efik translation		

Source: Field data

The table indicates that six publications are in circulation, two news magazines in the Southwest (*Akede* and *Alariya*) and four religious publications translated from the *Christian Women Mirror*. The Hausa translation circulates in the north, the Igbo circulation in the East and the Efik translation in the South South.

RQ3. What is the trend in the translation of English language books into indigenous Nigerian languages?

The Bible Society of Nigeria, BSN, an organization established to champion the cause of Bible publishing in indigenous languages, has published in more Nigerian Languages than any other publisher in the country. It has published the Bible in the under-listed formats and indigenous languages:

Table 4: Translation/Formats

S/N	Format	Number of Indigenous lang. Translations
1.	Complete Bible	13
2.	The New Testament	51
3.	Portions of the Bible	97
4.	Braille	NA
5.	Children's Picture Bible Series	

Source: BSN

The Society translates, prints and publishes the holy bible in as many languages as have fairly acceptable orthography and competent translators. The breakdown is as follows:

#### Complete Bible in Indigenous Nigerian Languages and Print Size

1.	Hausa Bible	Large Print	Small Print
2.	Igbo Bible	Large Print	Small Print
3.	Yoruba Bible	Large Print	Small Print
4.	Igala Bible	(Ongoing)	Small Print
5.	Ijaw Bible		Small Print
6.	Ffulde Bible		Small Print
7.	Efik Bible		Small Print
8.	Isoko Bible		Small Print
9.	Boky Bible		Small Print
10.	Urhobo Bible		Small Print
11.	Nupe Bible		Small Print
12.	Kana Ogoni Bible		Small Print
13.	Tiv Bible		Small Print
14.	Arabic Bible (for northerners who are literate in Arabic)		Small print

Source: BSN Secretariat

Some of the New Testament Translations are:

1. Itsekiri New Testament
2. Tangale New Testament
3. Idoma New Testament
4. Ebira New Testament
5. Igede New Testament
6. Irohin Ayo New Testament
7. Bura New Testament
8. Edo New Testament
9. Rubassa New Testament
10. Margi New Testament

The data made available by the bible society and presented here indicate that there is fairly acceptable orthography in about 51 of the 500 languages in Nigeria. The society has translated the complete bible into 19 indigenous languages and the New Testament bible

into 63. The fact that tracts and other publications have been made in another 46 (bringing the number to 98) indicates that work is being done to move more indigenous languages from the status of developing to developed languages.

### **Discussion of Findings**

It does appear that book is doing better than newspaper and magazine in the languages under investigation. But a closer look reveals that a government policy which makes at least one local language compulsory at the secondary level may be the sole reason for the sustained publishing of titles in those languages. The fact that literature texts in the same languages have done badly, as seen in the literature confirms this suspicion. The holy Bible is one title which accounts for most of the book translations. This suggests that other important titles published in English may thrive in the local languages if translated.

The *women mirror*, according to Ankomah (2006) circulates about 530,000 copies monthly in these languages as well as English, French, Twi and Swahili. The indigenous language editions are not as viable as the English and French editions. In other words, the trend observed in the book sub-sector is also present in the magazine sub-sector.

It was difficult to determine the strength and prospects of *Akede* and *Alariya* which have been in circulation for several years and strive to look like magazine in terms of colour scheme and cover design. The fact that the indigenous language editions of the *Christian Women Mirror* are only part of a more viable publication makes their prospects brighter.

Already they seem to be doing better than the religious magazines published by missionaries in the Niger Delta long before independence; they all appeared briefly and died. Among them are *Unwana Efik*, published by the Church of Scotland Mission in the 1880s, *Obupong Efik* (1886) and Yoruba translation of *In Leisure Hours*, published by the Church Missionary Society. With automatic translation software increasing in number and variety, it might be more profitable in future to translate other viable English language magazines to indigenous languages. According to Duyile (1987:61) the Yoruba translation of *In Leisure Hours* "which appeared regularly was referred to as *Nigbati Owo ba Dile* "

It does appear that the translation option, for books as well as magazines, is a more viable option for local publishers. The trend shows that publications, already acceptable to readers in English language stand better chance of being accepted in indigenous languages. The trend of religious organizations leading the way in indigenous language publishing has not changed significantly, a situation which indicates that the people's colonial mentality may still be a drawback to the development of indigenous languages.

### **Conclusion and Recommendations**

Right from 1859 when *Iwe Irohin* was published in indigenous language, religious organizations have been in the forefront in the development, translation and publishing of indigenous Nigerian languages. Today about 150 years later, they are still in the lead. Attempts by media professionals and publishers have not been rooted in anything beyond commercialism. This has made it impossible for them to invest patriotically in the development of indigenous Nigerian languages without which no meaningful communication will take place. It is therefore recommended that book, magazine and newspaper publishers interested in the development of indigenous publishing should co-operate with the Bible Society of Nigeria in this regard and also consider entering the religious publications market.

State governments should also work with the society with regard to the development of their various indigenous languages.

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## **Rural Information Provision for National Development: A Study of Kwara North Senatorial District of Kwara State, Nigeria**

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### **Introduction**

The rural areas of Nigeria are inhabited by the bulk of the nation's population; which serves as the base for the production of food and fibre. They are also the major sources of capital formation for the country, and a principal market for domestic manufactures (Olatunbosun, 1975). In general terms, the rural areas engage in primary activities that form the foundation for any economic development. Yet, despite the importance attached to the rural areas, they are not attractive to live in. There is absence of infrastructure, which improves the quality of life. Usually, there is absence of potable water, electricity and good feeder roads. The rural people have low purchasing power and standard of living (Olayiwola and Adeleye, 2005). In particular, the rural women, according to Zaid (2010) are still not able to cater adequately for the basic needs of food, clothes, shelter, obligations, lack of gainful employment and skills. They have limited access to social and economic infrastructure such as economic, health, portable water, sanitation and consequently, limited chance of advancing in their quality of life.

The development of any nation can be hardly achieved without a correspondent development of its rural segment; for the fact that 75 to 80% of the inhabitants in developing countries are in the rural areas. In Tanzania, for instance, 74% of the population lives in rural areas (World Bank, 1999). It is in the

rural areas that the population is still growing at a higher rate amidst poor social and economic infrastructure support (Msoffe, 2009). According to Adeloje (2007), more than 70% of the Nigerian population dwells in rural communities that contain over 80% of the natural economic resources and over 90% of the nation's agro-workers. With their great potentials, no serious, active, conscious, sensitive, and organized government would want to neglect rural communities; as its lack of development results in the neglect of rural areas. Thus, rural neglect leads to negative consequences such as rural-urban drift, resulting in unemployment, crimes, prostitution, child labour, insecurity, money laundering, bribery, poverty, proliferation of shanty living areas, spread of diseases, and overstretching of the facilities and infrastructures in the urban areas (Harande, 2010).

This implies that any nation, which neglects the development and empowerment of its rural dwellers, will have meaningful development eluding it. Alegbeleye and Aina (1985) affirmed this in their statement that "the third world countries have recently come to realize that unless the rural areas are well developed, hardly would any meaningful development occur in these countries." Okiy (2003) viewed rural development as a basis for economic development noting that information is an important ingredient in that development process. Development can only be effective if rural dwellers have access to the relevant, diverse information for their activities. She maintained that efforts must be made to give access to knowledge and information by non-literates who constitute the majority of rural dwellers.

People in rural areas whether literate or not should have access to any kind of information which will help them to become capable and productive in their social and political obligations, to become better informed citizens generally." Diso (2005) observed that the rural communities in Nigeria are the majority in terms of population, yet most neglected; partly accounting for the impediments to the effective information policy implementation. The quality of life in the rural setting according to Phillips (2006) in Zaid (2010) is a multifaceted phenomenon determined by the cumulative and interactive impacts of numerous and varied factors like housing conditions, infrastructure, access to various amenities, income, standards of living, satisfaction about the physical and social environment.

It has been noted that women living in rural Nigeria suffer from general deprivation including access to information resources. They most often fail to access various information resources and services even when such information is available. The reasons may not be unrelated to their socio-economic status or the format in which such information is packaged (Zaid, 2010). Issa (1998) expressed the view that "the rural populace suffers from acute low productivity, social and economic retrogression due mainly to ignorance which is also a direct consequence of either inadequate or total lack of information provision to them". Despite the human and natural endowment of the country, the rural communities are still essentially and largely underdeveloped.

Diso (1994) contended that Nigerian rural areas are generally characterized by poor living conditions- absolute poverty and absent of almost all amenities of life. Compared to the literacy rate in Nigeria (about 35-40%), this is even more acute among women and in rural communities. This means that the information needs of the teeming majority are not provided for, thereby resulting in underdevelopment. Borchardt (1977), once declared that none of the thousand of projects in the developing countries can be executed without the fundamental conditions of the establishment of a literate and numerate (rural) society, and a system for continuous provision of exchange of ideas, thought and knowledge on which

the (rural) society can feed and use with suitable modifications to construct their own cultural and industrial destiny.

Rural dwellers need relevant, efficient and current information. Camble (1994) believed that successful rural information programmes rest squarely on the availability and use of quality information by rural development workers and rural people noting that many of such programmes have failed in the past because the knowledge of their information needs were not so well considered. Access to information is important for proper functioning of services in all societies. Freedom and access to information is essential for development practice, representing a first step in any participatory process, now regarded as the standard development approach. Despite the fact that this has become an evolving principle in the democratization process of modern societies, free and fair flow of information remain an exception rather than a rule in many countries, especially the developing ones like Nigeria.

### **Statement of the Problem**

Nigeria has the potentials to develop all sectors of human endeavour more especially if information services are fully enhanced in the rural communities. In spite of the fact that information is a basic resource for development if durable structures are to be provided for effective access and utilization, entailing information capturing, coordination, processing and dissemination (Diso, 1994), Nigerian rural communities' accessibility to pertinent information still remain largely unmet. This is because information available to them is either not reliable or is distorted in the process of transmission. This unhealthy situation constitutes a major impediment, which keeps the rural communities from the development indicators (Harande, 2009). Whereas in the developed countries, rural projects are undertaken to reduce the gap between the urban and rural communities to the barest level, information accessibility and utilization are unequally distributed between the two in Nigeria. It is against this backdrop that this study investigates the provision of information for national development among the rural populace in Kwara North Senatorial District. The study's main objective was to examine their information needs and the available opportunities for providing for such needs, including the library.

### **Research Questions**

To achieve the objective of this study, answers would be provided to the following research questions; namely:

1. What kinds of information are needed by the rural inhabitants of Kwara North Senatorial District of Kwara State?
2. What kinds of information sources are available to them?
3. What kinds of information sources do the rural dwellers trust and prefer to use?
4. What problems militate against meeting the information needs of the rural dwellers?
5. What role can the library play in meeting their information needs?

### **Justification for the Study**

The study's justification lies in the fact that the information needs of the rural populace had enjoyed a comparatively low research attention, when compared with the attraction that the studies of information needs and provision in other settings have had over time; indicating further neglect. However, unless and until the teeming rural populace is well integrated into the mainstream of government policies and plans, through effective education for emancipation, real and concrete development will continue to elude the country.

This is because the importance of information and knowledge in the development process, especially rural development, is that much, which, mainly since 1998, has been noticed particularly in the reports of World Bank (Chapman & Slaymaker, 2002). In other words, there is no doubt that information is very important for rural development because improving the incomes of smallholder farm families will depend crucially upon raising agricultural productivity. Hence, the need to establish the rural information needs in the Kwara North Senatorial District of Kwara State, Nigeria, with a view to suggesting necessary platforms for meeting such needs comprehensively and adequately.

## **Literature Review**

### *Rural Information Services for National Development*

Success of rural development programmes depends on effective use of information in daily activities. Multidimensional as information services are, they serve as a socially binding thread among different groups of rural dwellers. The condition of rural dwellers in Nigeria and other developing countries is pathetic; with glaring evidence of abject poverty and general backwardness. Given the near-total neglect of the Nigerian rural areas by successive governments regarding infrastructural provision, which could have made their life worthy, rural dwellers (especially the youths) had little or no alternative than to drift to urban areas as an escape. Even though governments have come and gone with various policies and plans to improve their living conditions, including rural information services provision, not even the least remarkable results have been recorded.

Part of the reasons for this condition was the prevalent high rate of illiteracy among them, which accounted for their lagging behind in accessing information to necessary for meeting their diverse needs. Yet, only a little research attention have they receive when compared with their urban counterparts who are much better positioned than they are in all ramifications. Thus, "the structural and infrastructural problems, official corruption, unstable political and economic policies growing insecurity, and unstable power supply hamper this development" (Diso, 2005). The resultant effect has been that the Nigerian rural dwellers have not had their fair share of the country's enormous wealth. Information services that will greatly enhance their productivity, transform their community positively and empower them economically, are either ineffective and irrelevant, or not tailored towards their actual and potential needs. Thus, they experience information neglect; an incapacitating condition that had continued to constitute a cog in the wheel of the nation's progress and development.

Hence, poverty and illiteracy constitute the major barriers to rural development; contrary to the right of every citizen to enjoy the wealth, resources, and services rendered by the governments without any discrimination or neglect. Obasanjo and Mabogunje (1991) maintained that "for the rural populace to be able to exercise their sovereignty and assume responsibility for development, they must have necessary resources, adequate revenue allocation from Federal and State sources and internal capacity to generate their own revenue locally as well as access to relevant and desirable information for development." Indeed, information has been used by some progressive African states to re-socialize their people to value attitudes and goals compatible with their contemporary needs after political independence (Ibrahimah, 1986). This shows that the Nigerian rural dwellers could also be made information-conscious as a basis for their emancipation; ultimately bringing about national development.

### *Information Needs of Nigerian Rural Dwellers*

The diverse nature of rural communities indicates that their information needs are many and varied. To determine the totality of their information needs, Alegbeleye and Aina (1985) quoting Ogunshye, categorized information needs of the Nigerian rural communities to include the following:

- The neighbourhood: Information needs in the neighbourhood include problems of water supply, electricity supply, environmental sanitation, refuse disposal, road maintenance and drought.
- Health information on how individuals can, prevent different diseases that affect them, and awareness of available healthcare delivery and what it costs.
- Agriculture and allied occupations: The greatest area of information needs by rural Nigerians is in agriculture. Such information needs include planting treated seeds, soil conservation, prevention of plants and animal disease, fertilizer application, farm machineries, recommended thinning practices, proper storage of farm products, marketing techniques, cooperative activities and other agro-cultural activities.
- Education: Information needs of the existing rural schools, needs of the illiterate's and semi-illiterates. They need to have relevant information that will develop in their interest and support of teaching and learning processes.
- Housing: Rural public need information about where they can obtain loans to build houses and the type of materials to be used and where they can be easily obtained.
- Employment: Rural communities need information on employment opportunities on taxation, investment opportunities, banking and other financial activities.
- Transportation: They need information on the cost of bicycles, motorcycles and vehicles and where to obtain them. They need information about road construction and maintenance.
- Religion, Recreation and Culture: Information is required on religions, recreations and cultural activities.
- Welfare and Family matters: Information is required on problems of marriage, childcare, juvenile delinquency etc.
- Legal matters: Information is needed on laws that affect the rural dwellers. Such law ranges from marriage to land.
- Crime and Safety: Information is required on how to prevent crimes, report crimes, role of the law enforcement agents etc.
- Policies and Government: Information is needed on political rights of the people and how they can exercise such right.
- Land: Information is needed on land tenure systems, acquisition and transfer of land etc.

From the foregoing, it is clear that they needed in nearly all human endeavours while development can only be possible, effective and relevant when their information needs have been met. It has also been established that the rural communities in Nigeria have either poor or no communication systems (Businessday Newspaper, 2007). Yet, to develop, the rural dwellers must be informed and educated to develop along with the urban sections through an effective communication with the rural communities of the country (Adeloye, 2007).

## *Information and Communication Technology for Rural Development*

Information and Communication Technology (ICT) can play an important role in many aspects of rural development and also help to better govern their various aspects of development. ICT can strengthen the role of each governance pillar in rural development and poverty reduction; facilitating speedy, transparent, accountable, efficient and effective interaction between the public, citizens, business and other agencies. (IICD, 2001). The goal of using ICT with marginalized groups, such as the poor, is not only about overcoming the digital divide, but also enforcing/furthering the process of social inclusion, required for transformation of the environment and social system that reproduces poverty (Warschauer, 2002).

There are many examples about the role of ICT in strengthening rural livelihoods, providing market information and lowering transaction costs of poor farmers and traders. As poor people are often unaware of their rights, entitlements and the availability of various government schemes and extension services, ICT can also improve their access to the information they need. Through info kiosks or with the help of mobile phones, farmers can access information on market prices or on extension services. Timing is often crucial when it comes to the sale of produce. Workers can also get information on available jobs and minimum wages. Abissath (2008) noted that Ghana, like Malaysia, Singapore and other technology minded countries, is today gradually but steady taking ICTs to rural communities so as to bridge the digital divide between urban and rural dwellers.

One such strategy adopted to achieve this was the establishment of Community Information Centers (CICs) in districts throughout the country. By providing cheap and efficient tools for access to information and exchange of ideas and knowledge, ICT can become an enabling tool for wider socioeconomic development. When properly used, it can greatly increase the ability of the poor people to benefit from economic development and from development programs meant to help them. A major handicap in mass application of IT in rural areas is that the information content is generally not directly relevant to people for whom it is developed. The contents are written or designed by people who have themselves not lived in rural areas. As a result, these systems have a heavy urban-bias.

A key component of improving socio-economic status of people in villages is to ensure that their products find the right kind of markets, reach them in minimum time without the middle men involvement. The reach of IT in rural areas will provide unique opportunities to producers of rural products, agriculture/agro-processing products and rural handicrafts to have direct access to markets. Internet will enable advertising of rural products produced even in the remotest villages to global markets. The agriculture extension worker can access latest information on farm technology and products, and disseminate the same to villages. Health care is yet another area where IT can play a major role in rural areas. Doctor and the paramedic staff at the local public health centre or its subsidiary can access latest information about health schemes and seek advice from specialists about diseases or ailments they cannot diagnose or treat. Development of relevant contents in local languages, availability of computers that can run on low power and sensitization of local government officials towards IT can go a long way in using IT for rural development in near future.

### *The Place of the Library in Rural Information Provision*

Numerous studies have highlighted the short-comings of traditional print- and library-based methods of providing information to rural farmers and rural community who are generally illiterate and relatively remote from formal sources of information. Technology can overcome these barriers by delivering information right and need based to the rural people via new information technologies (Morris, 2005; Ommani, 2005). New information technologies are critical factors to open new information channels to the information-poor rural areas of developing countries (Morris, 2005).

Issa (2003) noted that the dissemination of information constitutes a major task of the public library as it is linked to any other communications organization to a great extent in respect of their importance to a democratic society just as those that manufacture the electronic and other mass media. In a sense, the public library concerns itself with the contemporary views and also serves as the society's "mind" and its "collectively memory". Thus, there is a sense in Usherwood's (1989) contention that "public libraries are potentially a means of establishing some measure of equal access to and redistribution of, the wealth of information. The need for such accessibility lies in the fact that information is fundamental to the life chances of the individuals and the community. In fact, to frustrate all manners and degrees of brains-washing, the public library need to be freely available to all and sundry.

However, Adimorah (1990) in Ogbomo (2008) noted that our information services are still elitist, serving only 20% of the educated group while the 80% illiterate rural dwellers wallow in information deprivation. According to Okeh (2002), the literature has stressed that the quality of life of rural dwellers can be improved by effective provision of relevant information to rural communities. Aina (1985) recommended that libraries should be established in rural areas so as to meet the needs of farmers. In order to ensure access to information, there is need provide for an information infrastructure, which includes appropriate and effective communication channels, delivery systems and access points needed for the acquisition, processing and use of information (Kiondo, 1998). Indeed, library services are essential to the educational, political, and social development of the rural population. The information gap between the urban and rural areas can be bridged by effective library services. The federal, state, and local governments have the responsibility to better the lives of rural people by reaching rural communities through effective library services (Ebiwolate, 2010).

Since the fundamental aim of libraries is to provide timely, accurate, pertinent, and reliable information for their users, there is now a growing recognition that public library services are an integral part of national socioeconomic development and improvement of the general quality of life (Kibat, 1990). However, the establishment of public libraries in Nigeria has been mostly limited to urban areas; resulting in illiteracy and ignorance among young people in rural areas. In Nigeria, a majority of the population lives in remote areas. Some of these areas are only accessible by boat, donkey, or bicycle. The inhabitants of these rural areas are without education. The library can have an important role in the advancement of knowledge. This role can be effectively carried out with well-structured and well-planned library services.

## **Research Methodology**

This is survey research method focussing on the rural communities spread across the remote parts of the Kwara North Senatorial District of Kwara State, Nigeria, numbering several hundreds. Representing this senatorial district are: Lafiaji, Patigi, Tsaragi, Ilesha Baruba, Bode Saadu and Malete. However, two of them were exempted on the ground that they have lost their ingredients of rurality though in different ways. Bode Saadu, for being on the federal highway and Malete, now a university town, would no longer meet the demand of this research. To collect data for the study, a total of 480 copies of the questionnaire were administered among the rural residents found at the time of visit to the remaining four areas. This number was considered adequate to the population of the rural residents in the four areas considering that the visits were on working days when many of them would be on their farms or gone to their local markets.

Of this number, 285 copies were duly completed and returned. The administration of the questionnaire was done during excursions by the course students to the areas, thereby facilitating the process. The analysis of the data presented here was therefore based on the number of returned questionnaire. While the descriptive statistics was employed to answer the research questions, the correlation statistics Pearson Product Moment Correlation (PPMC) was used to test the three hypotheses of the research. The visit also allowed for informal interview with some of the respondents for some clarifications as well as the observation of certain things.

## Data Presentation and Analysis

Table 1: Demographic Composition of Respondents

Demographic Characteristics	Frequency	Percentage
Senatorial District	83	29.13
Lafiagi	62	21.75
Patigi	54	18.95
Tsaragi	49	17.19
Okuta	37	12.98
Ilesha Baruba	285	100
Total	80	28.06
Occupations	77	27.1
Trading	48	16.83
Artisans	40	14.01
Civil Servants	20	7.0
Farming	20	7.0
Hunting	285	100
Fishing	120	42.10
Total	74	26.0
Educational Attainment	54	18.95
Primary	20	7.0
Secondary	17	6.0
OND/NCE/HSC	285	100
B.Sc.	20	7.02
Postgraduate	29	10.18
Total	56	19.65

Age	60	21.05
18-22	120	42.10
23-27	285	100
28-32	80	28.06
33-37	205	71.94
38 & Above	285	100
Total		
Gender		
Male		
Female		
Total		

Table 1 showed that the distribution of respondents cuts across the 5 of the 7 districts select for the purpose of this study with both Lafiagi (29.13%) and Patigi (21.75%) having the majority while Okuta (17.19%) and Ilesha Baruba (12.98%) with the least. Significantly, their occupational spread was predominated by trading (28.06%) and artisanship (27.1%) while hunting and fishing (7.0% each) are of the least responses. This is quite unusual given the age long predominance of farming as the typical predominant occupation of the rural dwellers. Expectedly, majority of them (42.10%) had primary school education, 26.0% with secondary school and 18.95% with OND/NCE/HSC qualifications. Only an insignificant number had higher qualifications. As for their age composition, majority (42.10%) fall in the 38 and above category while the female (71.94%) predominated.

Table 2: Categories & Sources of Information Needed by the Respondents

Information Needs	Respondents	Percentage
Occupation-related information	40	14.04
Political Information	40	14.04
Socio-cultural Information	40	14.04
Security-related Information	20	7.02
Health-related Information	16	5.60
Combination of 1 & 4	32	11.23

Combination of 1, 2 & 4	27	9.47
Combination of 1 & 2	20	7.02
Combination of 4 & 5	20	7.02
Combination of 2 & 5	15	5.26
Combination of 3 & 5	15	5.26
Total	285	100
Information Sources Available	80	28.06
Radio	60	21.06
Telephone	40	14.04
Television	40	14.04
Newspapers	35	12.28
Friends/Relatives	30	10.52
Extension Officers	285	100
Total	80	28.06
Challenges of Meeting their Needs	72	25.26
Lack of time	60	21.06
I am uneducated	40	14.04
I cannot afford it	33	11.58
Lack of electricity	285	100
Lack of interest		
Total		

Table 2 showed that the respondents have a diverse and wide ranging information needs typical of any human community; especially the occupational, political and socio-cultural needs each with 14.04%. That security and health related information needs accounted for just 7.02% and 5.60% respectively could be partly due to their closely-knitted and highly security-conscious nature of rural communities as well as their traditional health institutions of long reckoning. Also noteworthy is that many more also had series of combinations of information needs; implying that rural information needs are no longer of the simple, one-

directional type. This is a further confirmation of the widely held belief that information needs are basic to human existence regardless of where they reside, their socio-economic status or educational qualifications. On their sources of information, the radio ranked first (28.06%) and then telephone (21.06%) while friends/relations (12.28%) and extension officers (10.52%) are of the least. That the telephone now competes favourably with the radio as a source for meeting rural information needs in this case indicated that while the radio still retains its dominance in this regard, the telephone is steadily making its inroad into the rural areas as a veritable information source. Contrarily, that the newspapers are not so popular (14.04%) is not as surprising as the low response rates for friends/relations and extension officers. This may not be unconnected the popularity of both radio and telephone which may have supplanted the role of the two as information sources among the rural dwellers. Meanwhile, their major challenge with meeting their information needs border more on lacking in i. time (28.06%); ii. literacy (25.26%) and iii. interest (11.58%)

Table 3: Respondents' Trust and Preference for Information Sources

Information Sources	Well-trusted (%)	Trusted (%)	Not Trusted (%)
Radio	225 (78.90)	40 (14.0)	20 (7.0)
Telephone	163 (57.20)	103 (36.1)	19 (6.7)
Television	55 (19.3)	10 (3.51)	220 (77.2)
Newspapers	40 (14.0)	120 (42.1)	125 (43.86)
Library	40 (14.0)	25 (8.79)	220 (77.2)
Friends/Relatives	40 (14.0)	225 (78.9)	25 (8.8)
Agricultural Extension Officer	25 (8.8)	100 (35.09)	160 (56.14)
Health Officer	19 (6.7)	103 (36.1)	163 (57.2)
Information Sources	Most preferred (%)	Preferred (%)	Not preferred (%)
Radio	194 (68.07)	60 (21.1)	31 (10.88)
Telephone	149 (52.3)	120 (42.1)	16 (5.6)
Television	60 (21.1)	100 (35.1)	41 (14.4)
Newspapers	55 (19.3)	100 (35.1)	40 (14.00)
Library	45 (15.79)	100 (35.1)	13 (4.6)
Friends/Relatives	40 (14.0)	119 (41.8)	42 (14.7)
Agricultural Extension Officer	36 (12.63)	118 (41.40)	126 (41.40)
Health Officer	31 (10.88)	60 (21.1)	194 (68.07)

Table 3 showed the results on respondents' trust and preference of information sources available to them. The result revealed that the radio (78.90%) and telephone (57.20%) are their most trusted and preferred sources whereas agricultural extension officers (12.63%) and health officers (6.7%) are the least trusted and preferred. The reason for this finding may not be unconnected with their availability, affordability and easy usability of both radio and telephone (GSM).

Table 4: Respondents' Expectations in a Library of their Choice

Library Experience	Yes (%)	No (%)	Total (%)
I have been to a library before	120 (42.1)	165 (57.9)	285 (100)
There is a library in my community/environment	120 (42.1)	165 (57.9)	285 (100)
The library has benefits for the community	180 (63.2)	105 (36.8)	285 (100)
Activities Expected to Take Place in your Library	200 (70.2)	85 (29.8)	285 (100)
Community meetings	205 (71.9)	80 (28.1)	285 (100)
Socio-cultural engagements	176 (61.8)	109 (38.2)	285 (100)
Television, Video, Cinema viewing/audio listening centre	145 (50.9)	140 (49.1)	285 (100)
Story telling centre for children	246 (86.3)	39 (13.7)	285 (100)
Source of ante/post-natal information for women	221 (77.5)	64 (22.5)	285 (100)
Source of agricultural information for farmers	232 (81.4)	53 (18.6)	285 (100)
Source of occupational information for traders/artisans			

Majority of the respondents (57.9%) have neither been in a library before nor have a library in their communities/environments. This result is however without prejudice to the remainder 42.1% who have visited a library before and even have one either in their communities or in the neighbouring communities. This latter response is by no means remarkable, given the unpopular status of the library especially in the rural communities, as it pointed to an improved popularity. This result was further attested to by the fact that 63.2% majority indicated that library is beneficial to the community where it is available; pointing to their perception about what the library can do to a community where it exists.

On the activities that respondents would like to see taking place in the library of their choice, the responses are as interesting as they are diverse. These range from seeing the library serving as a source of: ante/post natal care information for women (86.3%); occupational information for traders/artisans (81.4%) and agricultural information for farmers (77.5%). Other desirable activities indicated by the respondents include using the venue for socio-cultural engagements (71.9%); community meetings (70.2%); television, video viewing and audio listening centre (61.8%) and storytelling centre for children (50.9%).

## The Results of the Tested Hypotheses

In testing the three hypotheses of the study, the Pearson Product Moment Correlation (PPMC) statistics was employed; the results of which are presented in this segment.

Table 5: Analysis of the Relationship between Respondents provided, and those not provided, with Needed Information

Variables	N	Means	SD	Df	Calculated r-value	Critical value	Decision
Rural Dwellers provided with needed information	285	12.72	3.08	284	0.874	0.113	Rejected Ho
Rural Dwellers not provided with needed information	285	10.51	7.13				

From the table above, the calculated r-value is greater than the critical value at 0.05 level of significance. The Null hypothesis of no significant relationship between rural dwellers who are provided with information and those who are not, is therefore rejected. This means that there is a significant relationship between the rural dwellers provided with information and those not provided. This implies that information provision is of great importance in the life of the rural dwellers just as it is for the urban dwellers. The implication of this finding is that the provision of information to rural dwellers such attract equal, if not more, attention of all the stakeholders since such provision will have a far-reaching positive impact on their day to day undertakings thereby enhancing their potentials towards national development.

Table 6: Analysis of the Relationship between Information Sources trusted and those preferred by the Respondents

Variables	N	Means	SD	df	Calculated r-value	Critical value	Decision
Rural Dwellers' trust of Information Sources	285	15.04	3.47	284	0.942	0.113	Rejected Ho
Rural Dwellers' preference for the trusted sources	285	16.33	4.38				

From the table above, the Calculated r-value (0.942) is greater than the Critical value (0.113) at 0.05 level of significance. The Null hypothesis of no significant relationship between information sources trusted and those preferred, is therefore rejected. This means that there is a significant relationship those information sources trusted by the respondents and their preferred sources. This implies that there is a link between the sources trusted by the respondents and those preferred by them for meeting their diverse information needs. In other words, those sources trusted by the respondents are most likely to be the most preferred by them.

Table 7: Analysis of the Relationship between Other Information Sources and the Library for Rural Information Provision

Variables	N	Means	SD	df	Calculated r-value	Critical value	Decision
Other sources of rural information provision	285	11.10	4.21	284	0.936	0.113	Rejected Ho
Library as a source of rural information provision	285	5.75	1.64				

From the table above, the Calculated r-value (0.936) is greater than the Critical value (0.113) at 0.05 level of significance. The Null hypothesis of no significant relationship between other sources of rural information provision and the library, is therefore rejected. This means that there is a significant relationship between other sources of rural information provision and the library. This result implies that there is a role for the library to play in the provision of information to the rural dwellers; if only the right framework for the establishment of such a library, taken into account the peculiarities of the rural circumstances, will be evolved.

## Discussion

The result on the diverse nature of the respondents' information needs/demands is significant on a number of accounts. This finding attested to the long established and widely held belief that information is basic to every human being regardless of their areas of residence. There is no doubt therefore that satisfying such diverse needs could contribute to the empowerment and emancipation of the individuals, culminating in national development. Thus, the role of information in rural development for national development cannot be overemphasized (Borchardt, 1977; Issa, 1998; Diso, 2005; Zaid, 2010).

Furthermore, there is a link between the results which revealed that trading and artisanship are the dominant occupations of the respondents with the one showing that the studied areas are populated mainly by women and the aged. This finding did not only confirm the much-talked-about rural-urban drift syndrome, but more importantly that with the depletion of rural areas of able-bodied youths, the traditional farming occupation of the rural dwellers is fast becoming a thing of the past. The consequence of this, especially on the long run, may spell doom for the areas studied, and by extension, the nation's development. These results did not support many earlier views and positions expressed by Olatunbosun (1975); Olayiwola and Adeleye (2005) and Adeloye (2007).

Whereas the findings on the diverse information needs of the respondents agreed with the position of Alegbeleye and Aina (1985), and Issa (2003), the competitive role of the telephone (GSM), coming very close to the radio, which had been the most popular medium of rural information provision, was quite noteworthy. Thus, the GSM has come to establish itself clearly as another source of outstanding reckoning in this regard. This was indicative of the dominant role of ICT in the development of both the urban and more importantly, the rural areas.

Significantly too, the result pointed to the fact that the library is also making its mark in this regard; especially among those who have had previous contacts with the library. However, the result was indicative of the need to reposition the rural library so as to take cognizance of the peculiarities associated with the rural environment; if it must impact positively as a veritable tool for effective rural information provision for national development. This finding agreed with those of Issa (1998), Issa (2003), Ebiwelate (2009) and Ogidefa (2010).

Meanwhile, the results of the three tested hypotheses rejected the Null Hypotheses of *No Significant Relationship* (NSR), between: i. respondents provided with needed information and those not provided; ii. sources of information trusted and those preferred; and iii. other sources and the library. The implications of the results are that: i. the respondents who were provided with needed information make the difference from those who were not; ii. the sources of information trusted by the respondents turned out to be their most preferred sources; and iii. that the library, given the necessary orientation and modifications compatible with rural peculiarities, can serve as a good source of rural information provision for national development.

The implication of the results on the various activities that respondents would like taking place in the library of their choice is that, for the library to be relevant to their information needs, peculiarities of their idea of a library must be taken into consideration. Anything contrary to this may render it use-less irrelevant and therefore counterproductive. This means that the conventional type of library may not work with the demands of the respondents; hence, the need for appropriate modifications.

### **Conclusion and Recommendations**

On the basis of the analysis of data and the discussion of the findings provided above, this study concludes that the rural dwellers in the areas studied are as information-hungry as any group of human beings anywhere else. This condition presents a huge challenge, which must be overcome; if the vast potentials of the rural dwellers must be harnessed, with a view to enabling them contribute their significant quota to national development efforts.

It is on the basis of the above that the following recommendations are made:

1. Due to the diverse nature of their expressed information needs, a concerted effort will be required to satisfy same through the deployment of a combination of sources, techniques and approaches towards satisfying the needs by the State Ministry of Information, the State Library Board and the GSM operators.
2. Coupled with the traditional, popular role of the radio, other agencies of information especially the agricultural extension and health officers, must be well exploited towards meeting rural information needs.
3. A combination of information dissemination apparatuses namely the radio, telephone, library and television should be explored complementarily in conjunction with the agricultural extension and health officers towards meeting the diverse needs of the rural dwellers.
4. The authorities of the State Library Board must strategise itself for this purpose such that it can liaise with the other information agencies in concretizing efforts towards satisfying their information needs.
5. In so doing, the Library must take into account the obvious peculiarities associated with the rural environment, so that at the end of the day, the effort will not be use-less, irrelevant and ultimately counterproductive.

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# Availability and Use of Electronic Resources in African Universities: The Nigerian Perspective

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## Introduction

In the past decade, there has been an increase in the availability and use of electronic resources in university libraries globally with few exceptions in some African countries. These countries had made efforts to introduce electronic resources in their libraries, which is present in many academic and research libraries in the continent. However, in some countries in Africa, the inequitable access to the Internet and electronic resources is attributable to the poor state of ICT infrastructure and lack of adequate investment on workers to support the new communication technology. In Nigeria, there is a disparity in the level of accessibility to ICT between some universities as some are enjoying maximum supports from NGOs. With this dwindling availability of electronic resources, the librarians and library users are having vague understanding of resources, therefore, making their use (if available) very low. Presently, many African Universities have made efforts to provide these electronic resources on their own. In the South African axis and part of the sub-Saharan, many libraries are enjoying the availability and usability of electronic resources. Nigerian University Libraries in particular, can boast of access to databases such as E-Granary, Ebscohost, AGORA, OARE, HINARY, JSTOR and so many others.

Libraries of all sizes and types are embracing digital collections, although most libraries will continue to offer both print and digital collections for many years to come. New purchases and purchases of journals, magazines, and abstracting and indexing services are heavily weighted toward digital, while digital books (e-books) are only beginning to become a presence in library collections. Although, in Africa, the inequitable access to the Internet and electronic resources is attributable to the poor state of ICT infrastructure and lack of adequate investment on workers to support the new communication technology. In Nigeria, there is a disparity in the level of accessibility to ICT between private and public sectors of the economy. In most public institutions: such as universities, polytechnics, primary and secondary schools, and government ministries, access to ICT, if not completely lacking, is inadequate (Ani, Uchendu and Atseye (2007).

Many African countries have made efforts to introduce electronic resources in their libraries, and these can be seen in many academic and research libraries in the continent. Omekwu (2002) revealed that African countries are in different stages of electronic resources development and use. The use of electronic resources has contributed to reshaping information retrieval process and access to information. In the past, information was transferred from librarians to the users. Presently, most of the communication and transfer of information is between the users and the computers and this is due to the storage of

information in the electronic resources which are usually operated with use of computers. There are several electronic resources in the African university libraries which include the Internet resources, electronic databases like the e-granary, CD-ROM, electronic journals and electronic books etc.

Several years ago, most of the African libraries did not have startup capital for the provision of these resources especially the CD-ROM because of the enormous amount involved. Many of the African libraries obtained their CD-ROM database through grants and donations from international agencies and foundations such as UNESCO, USAID, CTA, and the Carnegie Corporation of New York, the MacArthur Foundation and Rockefeller Foundation. In support of this view Asamoah-Hassan (2004) reported that African libraries are poorly funded. Owing to this, Non- Governmental Organizations (NGOs) have come into African libraries to assist in strengthening them to perform the functions expected of them. In 1989 for instance, Technical center for Agricultural and Rural Cooperation (CTA) launched a project to introduce CD-ROM technology hardware, software, bibliographic CD-ROM databases in agriculture and training in basic computer skills in literature retrieval in some African countries Massawe (1994).

With this dwindling availability of supposed electronic resources, the librarians and library users are having vague understanding of resources, therefore, making their use (if available) very low. Notwithstanding, the case is relative to countries as some library users who have the capacity to use information communication technologies find the digital resources easy to utilize. Presently, as the digital divide concept is waning, different individuals, especially in the academic world are beginning to appreciate the Internet resources and other e-resources they have access to.

## **Literature Review**

Electronic resources have been used to provide accurate and timely information, especially for students who depend greatly on the electronic resources for information to boost research and collaboration with counterparts around the world for intellectual growth. Information is in fact very crucial for the acquisition of knowledge and development. This explains the rationale for the introduction and acquisition of electronic resources in libraries around the world to facilitate scholarly communication.

In China, the Baozhalong Library in Shanghai Liao Tong University and Ocean Information Institute provided CD-ROMs including LISA, NTIS (National Technology Information Service) and MEDLINE for their users (Salanje, 1995). Salanje further revealed that by 1988, the University of Bahrain was subscribing to more than 25 different CD-ROM databases in science and technology, arts, social sciences, library technical services and general references. Also, that PAHO (Pan American Health Organization) integrated LILACS and REPIDISCA (their two health information databases) into a single regional database and started to pre-master a prototype CD-ROM version in early December of 1986 in San Paulo, Brazil. The provision of databases provided the users a way to access large bodies of information and to retrieve the needed information quickly. Also, libraries in China, Peru, India, Bangladesh and Cuba were among the selected group of 40 libraries in 24 countries that benefited from a donation of prototype disc with a total of 187,000 complete records from the CAB Abstracts databases which cover the period of November 1983 to March 1985 and from the database of the Bureau of Hygiene and Tropical Disease from donor organizations.

Owing to the presence of electronic resources, there is a reduction in the number of mediated searches in some libraries in America and Hong-Kong. This is because they find the CD-ROM easy to use (Salanje, 1995). Also, for immediate acquisition of information from remote places and for teaching, the University of Canberra in Australia provided Internet access to its entire academic staff (Applebee, Clayton and Pascoe, 1997).

Wishart (1999) discussed the advantages of the introduction of CD-ROM in the schools in the United Kingdom. He asserted that the installation of CD-ROMs in the schools increased the teaching role and status of school librarians, with 85% of schools locating CD-ROMs in the school library. Ormes (1998) reported improved services in Danish Public libraries with the provision of 42 public access computers with free Internet access (including several in the Children's library) via a leased line, in the Roskilde library while Silkeborg library offers free public access to the Internet on 17 computers. Moreover the Silkeborg library has a web server with OPACs and provides tourist information about the area. Also, Arhus library offers free public Internet access on 35 work stations and a web accessible OPAC.

According to Fayter (1998), to show the importance of electronic resources and to promote the use of Internet, a course titled; "Teaching and learning with the Internet" was introduced for lecturers at York University. Dew (2001) also revealed that due to students demand for full text information, the University of IOWA libraries in America purchased access to Ebscohost to improve educational outcomes. Similarly, the University of Toronto in Mississauga has one of the largest collections of electronic resources in North America including electronic textbooks and over 10,000 e-journals subscriptions. The McMaster University which has been actively collecting electronic resources has over 4,000e-journal subscription (Darimont, 2001).

Furthermore, John Rylands library in Manchester moved some of their materials out of the library into temporary storage to provide space for the use of electronic resources to provide accurate and timely information for their users. A study by Ray and Day (1998) on students' attitude to electronic information resources in university of Northumbria at Newcastle revealed that 37.5% of the students used e-journals as information retrieval tool.

According to Riedling (2004) the Cattagni and Farris statistics on Internet access in the U.S. public schools carried out in 2001 revealed that by the fall of 2000, 98% of public schools were connected to the Internet compared to 35% in 1994. Cattagni and Farris opined that the ratio of students to instructional computers with Internet access for teaching, learning and class projects in public schools improved from 9 to 1 in 1999 to 7 to 1 in 2000.

ERNETT India, a scientific society under the ministry of Communication and Information Technology, in partnership with the University Grants Commission (UGC) set up infrastructure for UGC-INFONET. The aim of the collaboration according to Chakravarty and Singh (2005) is to use information and Communication Technology (ICT) and Internet to transform their learning environment from a mono-dimensional to a multi- dimensional one. Also Chakravarty and Singh reported that to facilitate scholarly e-resources to Indian academies, UGC, INFLIBNET and ERNET interlinked universities and colleges in the country electronically in order to achieve maximum efficiency through Internet enable teaching, learning and governance.

Banionytė and Vaškevičiene (2006) revealed that in 2001 only 40% of public libraries in Lithuania were able to offer computers connected to the Internet for their users while all academic libraries enjoyed Internet services. In addition, due to several governmental and private initiatives in 2005 all Lithuanian public libraries, with the exception of all the

branches in villages, offer Internet services for their users. This improved the patronage and use of the libraries resources (Banionytė and Vaškevičiene, 2006).

There is also a dominance of access to electronic journals in environmental, materials, medical and business studies in United Arab Emirate. According to Taha (2004), this dominance is due to the priority given to such fields of study by United Arab Emirate university research funding and graduate programmes. Taha opined that emergence of electronic journals in the library services improved efficiency of information practices as well as supported a range of research activities and trends. He revealed that at present the United Arab Emirate university library is wireless - networked throughout the five university campuses. The university library developed interactive web portal (<http://www.libs.uaeu.ac.ae>), which provides access and several options to search and reaches a wide variety of networked electronic resources and services.

Ibrahim (2004) stated that the web portal developed by the United Arab Emirate University provides remote access to a great number of electronic resources which includes full text databases like Emerald, Academic Search Premier, ScienceDirect and United Nation official Document System (ODS). Moreover the library has electronic books collection in food systems, engineering and philosophy through NetLibrary. Also electronic journals covering subjects and bibliographic databases like AGRICOLA and EcoNbase and collections of Internet resources indexed by subjects are available in their library (Ibrahim, 2004).

Electronic journals are highly accepted in the Netherlands especially by scientists and social scientists. Vakkari (2006) however argued that the high patronage enjoyed by e-journals is because it is readily accessible and functional, not necessarily because of its rich contents. Furthermore Dilek-Kayaoglu (2008) revealed that one of the barriers to the use of e-journals as reported by 42.7% of respondents in his study is lack of awareness of e-journal services in their library. Other barriers are; not being familiar with the use of

In a study on information technology utilization and library automation in Malaysian Educational institutions, Teh (1997) revealed that more than 50 schools have their own World Wide Web or Web home pages. Teh also reported that in a local survey carried out by Laili (1993) On Online Public Access Catalogues (OPACs) usage revealed that a high percentage of users faced problems when using Boolean logic for searching. Also, Hart (1996) wrote that an empirical finding concerning goals of users searching OPAC at a Northeastern United States University revealed that respondents used OPAC only to search for course or degree related projects.

Presently, many African countries have made efforts to provide these electronic resources on their own. Discussing the status of Information technology in Zambia, Chisenga (1995) revealed that many libraries in Zambia subscribe to CD-ROM databases. He further reported that notable CD-ROM databases are at Mount Makulu Agricultural Research Station, the Tropical Disease Research Centre, British Council library and the Martin Luther King Jr. Memorial Library in Zambia.

Giving credence to this view, Makondo and Katuu (2004) wrote that as at 2000, the University of Zambia library had 29 CD-ROM database titles. The library was known as one of the first Southern African universities to have Internet connection in 1990. CD-ROM databases like AGRIS, TROPAG, CAB Abstracts, MEDLINE, AGRICOLA, SILVER PLATTER and POPLINE are available in most of the libraries and information units in Malawi. Kiondo (1997) posited that the 1993 introduction of CD-ROM at the University of Dares Salaam (UDSM) Library through the Carnegie Corporation of New York grant brought about the

acquisition of two CD-ROM work stations, a laser printer and subscription to some CD-ROM databases. Also, Mutula (2000) wrote that a South African subsidiary of a US-based company National Inquiry Service (NISC) makes database available on CD-ROM. The service can be used by libraries in the region to publish their bibliographies on CD-ROM. Similarly, Chuene (2001) mentioned the acquisition of 49 CD-ROM databases and introduction of Internet in the late 1990s at the University of the North, South Africa.

Many African countries have also provided Internet services for their libraries. Mutula (2000) reported on the establishment of websites by the University of Dar es Salaam in Tanzania and Makerere university libraries. He also wrote that Makerere University has dial-Up connection to a local Internet service provider (ISP). Mutula (2001) explained that East African countries (EAC) like Kenya, Tanzania and Uganda experienced problems with connectivity to the Internet due to the high prices of computer hardware and software. However he revealed that Makerere University in Uganda and Kenyatta University in Kenya benefited from the establishment of African Virtual University by getting equipment and Internet connectivity. This made it possible for them to gain access to electronic journals. Mutula further explained that there are operational networks in the sub-region such as the Regional Integrated network for Africa. The network connects Kenya, Uganda, Tanzania, Zambia and Malawi. The Eastern and Southern African network covers Uganda, Kenya, Tanzania, Zambia and Zimbabwe. There is also the Pan African Documentation Information Network (PADISNET) connecting 34 countries in Africa, among Kenya, Uganda and Tanzania; and the African Regional Standard Organization Network (ARSONET) which covers Kenya, Ethiopia, Senegal and Egypt (Mutula, 2001).

Magara (2002) opined that CD-ROM and on-line retrieval services were the most utilized electronic resources in Uganda. He posited that the availability of Internet in that country enhanced communication and resource sharing among the communities. In his own study, Ojedokun (2001) wrote on the provision of access to the Internet through faculty and departmental computer laboratories as well as the library in University of Botswana. Ojedokun and Owolabi (2003) revealed that their respondents in University of Botswana were skilled users of the Internet only as far as its application in research activities were concerned in spite of the fact that University of Botswana, has its own website with full Internet access in their library Aina (2004).

Badu (2004) painted a dismal picture of information technology and resources in Ghana due to insufficient hardware, intermittent electric power cuts and staff attitude towards the new technology. Muswazi (2005) reported the availability of 40 computers and access to 52 CD-ROM and EBSCOHOST Internet subscription based full text databases and free web resources and services. He revealed that majority of his respondents' rated print sources higher than Internet sources and CD-ROM databases. However Badu and Muswazi's report does not dampen the fact that presently there has been a crucial growth in the availability and use of electronic resources in Africa more than in the late 1990s.

In Nigeria for instance, there was an increase in library use in University of Agriculture, Abeokuta. The increase was due to the introduction of The Essential Electronic Agriculture Library (TEEAL) that has 130 journal titles on an external hard drive (Oduwole 2005, Aboluwarin, 1996). The introduction of TEEAL helped research students to acquire information for their work. Sani and Tiamiyu (2005) also reported the availability and use of OPACs in university of Agriculture Abeokuta. In fact, Idowu and Mabawonku (1999) reported that 10 (76.9%) of university libraries in Nigeria had CD-ROM databases. Anasi, (2005) revealed that some of the universities like University of Ibadan, Ilorin, Jos, Lagos and Ahmadu Bello University, Zaria subscribed to ISI (Institute for Scientific Information)

and Silver Platter Ebscohost for database CD-ROM. However Igbeka and Okpala (2004) posited that since the 1995 introduction of CD-ROM literature search into the University of Ibadan library system, the number of users of the CD-ROM facility was still very small as against the number of registered library users. This they revealed might be due to lack of current awareness or dissatisfaction of users.

At the University of Benin, the library is subscribed to so many journal databases as well as being a member of a consortium for the sharing of such databases like the Ebscohost. The library subscribes to HINARI, AGORA, OARE, JSTOR, LexisNexis etc. They also have E-granary (a database in a computer system which comprises of all subject areas) and it is hosted in the UNIBEN Network where every user within the network can have free access to the databases without internet connectivity. Few months into 2011, MTN foundation (A GSM service operator) donated an e-learning centre for the library. In the centre, there are lots of databases that can be accessed as well as other library routines exercises that can be executed at the centre viz: inter library loan and cataloguing using SABICAT.

Presently, many Nigerian universities have websites. Most of the universities are connected to the Internet thereby making it possible for students to interact with their counterparts around the world. They also obtain quality information through the Internet to boost their research. Jagboro (2003) in his study on Internet use at Obafemi Awolowo University, Ife (OAU), revealed that Internet access was provided to students and staff who do not have access in their various offices. Similarly, Sanni and Idiodi (2004) reported that the residential quarters at University of Benin were being networked for Internet access. They further revealed that there is a cybercafé where staff and students can access the Internet. Also, their library collection can be accessed through the Online Public Access Catalogue (OPAC). Presently, the library is trying to host their OPAC into the Internet (WEBPAC), so that users outside the library or the institution can access the library catalogue system.

Ojokoh (2005) revealed that Internet access was provided to the Federal University of Technology Akure community through the university cyber café. He further reported that none of the respondents in his research work used e-mail to communicate with lecturers. Oduwole (2005) also wrote on the increasing number of universities connected to the Internet but he asserted that the services were plagued with problems ranging from limited number of work stations, inadequate help support services, queues, space problems and lack of proper co-ordination.

The existence of these problems however has not in any way dampened the provision of the electronic resources by the universities in Nigeria. The University of Ibadan official bulletin special release (2006) reported that the following electronic resources; AGORA, HINARI, LANTEEL, EBSCOHOST, EGRANARY and DIGITAL LIBRARY, are available in Kenneth Dike Library. There are also on-line journal resources such as, HIGHWIRE, ARCHIVE, AFRICAN JOURNALS ON-LINE, POPLINE, BIOMED CENTRAL and others acquired through journal donation project. Also in 2000, the university of Calabar library acquired about 16 computer systems and subscribed to a number of on-line databases such as AGORA, HINARI and EBSCO for its users (Ani, 2007). The University of Port Harcourt equally subscribed to EBSCO and JSTOR in 2006 while they subscribed to AGORA and HINARI in 2007. The University of Port Harcourt does not offer Internet services in their library. However the members of the academic community were given institutional usernames and passwords. This enables them to have access to full text journal articles, databases and other resources or the Internet from the cyber cafes in the information communication centre on campus.

## **Conclusion**

Libraries acquisition of electronic resources afford users the opportunities of access to relevant and up-to-date information from different subject fields. They are also the link to the process of useful research and learning activities which can boast the socio-economic development in the continent. Information in the electronic resources is up-dated often and students are given the opportunity of multiple file searches which cannot be done with printed tools. Moreover, information collected from electronic resources by students can be printed out or saved to be retrieved later. Ray and Day (1998) stated that recalling information from electronic information sources are often faster than consulting print indexes, especially when searching retrospectively and they are straightforward when combination of key words are used. E-resources save the time that would otherwise have been used in searching through pages of printed tools. E-resources also contain large volumes of information which allow students to retrieve as many quality information as they desire. These electronic resources are gateways to other resources. This means users can retrieve information from around the world without difficulties or financial concerns.

Furthermore, electronic resources offer significant benefits to university libraries such as reducing the problem of inadequate space and mutilation of books. Giving credence to this view, Norris (2004) asserted that electronic resources reduce pressure on academic libraries for physical space for storage of books and journals, gives the librarian the assurance that the electronic books and journals are complete, un-vandalized and in the right place and provides unlimited access to users. Electronic resources encourage interlibrary loans and gives fast and easy link to other libraries. Through electronic resources, university students are given access to current materials and educational information for learning and research.

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