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USE OF ELECTRONIC DATABASES BY THE SCIENTISTS IN IITA, IBADAN, NIGERIA

BY

TITILAYO COMFORT ILESANMI*

ABSTRACT

This paper examines the use of The Essential Electronic Agricultural Library (TEEAL), Swetswise, and JSTOR (Journal Archives) among International Institute of Tropical Agriculture scientists. Instruments used in this study were library records, interview and observation. The library records collected covered the period of five years (2006 to 2010). This paper revealed that IITA headquarters in Ibadan, Nigeria as well as other stations used the three databases. TEEAL among the three electronic databases was discovered as the most used database. Barriers to effective utilization of the electronic databases were identified and solutions were proffered.

Keywords – Electronic databases; International Institute of Tropical Agriculture (IITA); Scientists; Utilization.

INTRODUCTION

Electronic databases have opened an innovative avenue in the field of information and library services, for professionals as well as their clientele. They are made accessible with the aid of computers and information technology infrastructure in form of collections such as e-books, e-journals and e-references to mention a few. They are useful for learning, studying and research. In research institutions, electronic databases that are widely used are journal-based. This was confirmed from studies conducted by (Angello, 2010). This was because journal based databases contain current information used for research purposes and quick update of new research results. Also article in press are accessed and used electronically before being published either electronically or in print. In agricultural settings, current information is vital to an outstanding research output, hence the need for updated resources to foster such ground. E-resources have made it possible to handle electronic document delivery quickly, maximised electronic resources allocation through joint subscriptions and removal of geographical/distance barriers thereby enhancing accessibility by multiple users regardless of time or location.

* Titilayo Comfort Ilesanmi, Kenneth Dike Library, University of Ibadan, Ibadan

Even though there is a wide and growing literature on the e-databases in both the developing and advanced countries, research on the use of e-resources by the scientists in research institutes are rear. This type of study is necessary in order to ascertain the level of e-databases usage, identify challenges encountered and proffer ways of optimising its usage by research institutes scientists. Furthermore, there is need to improve on previous studies by addressing the information needs and demand of the scientists in research institutes. It is against this background that the study investigated the use of e-databases by the scientists in IITA which is a research institute.

THE INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE

The International Institute of Tropical Agriculture (IITA) is a non-for-profit international agricultural research institute with headquarters in Ibadan, Nigeria and other stations – Uganda, Benin, Cameroon, Ghana, Mozambique, Tanzania, DR Congo, Kenya and Malawi in sub Sahara Africa. It is majorly supported by the Consultative Group on International Agricultural Research (CGIAR). Consultative Group on International Agricultural Research is an association of about forty countries, international and regional organisation and private foundations. International Institute of Tropical Agriculture (IITA) was founded in 1967. The Federal Government of Nigeria provided one thousand hectares of land at Ibadan, for its headquarters and experimental farm sites. IITA is governed by an international board of trustees. The staff includes scientists and professionals from different countries. They work at the selected locations in many countries of sub Saharan Africa.

The goal of IITA is to increase the productivity of key food crops and to develop sustainable agricultural systems that can replace bush fallow, slash-and-burn, cultivation in the humid and sub humid tropics, thus helping especially to improve the nutritional wellbeing of developing countries citizens.

THE INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE LIBRARY

The IITA Library and Information Services was established in 1967. The main purpose of the Library is to meet the information needs of research scientists (who are the library primary users), research students and support staff respectively. Hence, the library is charged with the responsibilities to select, acquire, subscribe, purchase, process, disseminate and conserve resources both in print and other formats that is needed for research and development. These resources are acquired through purchase, subscription and gifts. In the recent time, most of the library additions have been through purchase and subscription.

The IITA Library operates automated library systems. This has greatly improved the effectiveness and efficiency of the services provided to real and virtual users of the library. Also the library purchased TEEAL, subscribed to one hundred and fifteen e-journals through Swetswise and JSTOR to complement the print resources available in the library to better serve all the IITA stations researchers.

ELECTRONIC DATABASES USEFUL FOR AGRICULTURAL RESEARCH

According to Singh and Mehla (1995) and Azubike (1995) as cited by Oduwole (2006), there are different databases that serve agricultural researchers either offline or online, such as databases on CD ROM, AGRICOLA, CAB Abstracts, BIOSIS, CARIS, TROPAG etc. Recently more online databases that cater for the information needs of agricultural researchers have emerged. These enable researchers' access and use resources virtually anywhere at any time. These are AGORA, HINARI, BioOne, JSTOR to mention a few. Also some databases are made available to libraries and users through aggregators' like Ebscohost. All are aimed at meeting the information needs of researchers promptly. One of the three e-databases is made available offline - TEEAL while others are available online - Swetswise and JSTOR. The Essential Electronic Agricultural Library (TEEAL) is a digital library in a box project of Cornell University Library, Ithaca, New York. It is a fulltext user friendly database of about 146 prominent agricultural journals from 1993 to 2009. Selection of journal in TEEAL were made by the international professionals in the field of agriculture. TEEAL is being funded by Rockefeller foundation. The TEEAL database that was formally made available in over four hundred CDs is now fused into just one disc which made its usage more convenient. It does not require Internet connectivity for accessibility and saves a lot of space, a problem that libraries faces today due to volumes of hard copies of journals and other library materials (Ezomo, 1994; Gooch, Getaneh, & Woolley, 1995). However, there is need for buying an update on yearly basis to keep the database current for use. On the other hand, online electronic databases require steady Internet connectivity and good bandwidth to use them. Both offline and online databases need computers, steady electricity supply and skills to enable researchers access them. Also, it is essential that the librarian renew annual subscriptions to sustain the past volumes and current online databases subscribed to. There are licenses and agreements that are common to e-resources which must be read and understood by librarian before signing and accepting the agreement. The essence of this is to maintain ethical use of these resources by researchers and their beneficiaries. Information literacy trainings are to be

organised by librarian for their community (researchers and staff) to create awareness and best practice of the use of resources particularly, electronic databases.

Oduwole (2000); Agboola (2001); Okpala & Igbeka (2005) and Oduwole & Sowole (2006), surveyed the use of The Essential Electronic Agricultural Library (TEEAL) which revealed that researchers welcomed its usage and found it current and useful. Some challenges such as high cost of printing, erratic power supply and the need to train end-users in searching skills was identified.

Swetswise is a database that provides access to growing range of full texts journal titles and e-books that covers different subject areas in which agriculture is one. It is an online based database that requires registration, Internet connectivity, security typing in code which is case sensitive. Other information for usage includes username, password and IP authentication. Advantage of this database is that users can access resources anywhere around the world provided you have and know your access combinations. It allows access to all content and fulltext e-journals and e-books subscribed from different publishers on different platforms through single interface. It also has multi-level linking, statistical reporting and current awareness/dissemination tools. Swets has introduced Mendeley institutional edition which provides librarians and institutions with means to connect their collections directly to researchers and other users. It creates rooms for workflow support, collaboration and opportunity to showcase institutional values as it relates to agricultural study.

JSTOR is an online journal store with full texts in 57 disciplines with over a thousand academic journals in which agriculture is included. It was founded in 1995 to provide member, institutions fulltext searches and access to digitized back issues of several hundred journal titles dated back to 1665. It was originally funded by Andrew W. Mellon Foundation, but now an independent self sustaining not for profit organization with offices in New York City and Ann Arbor, Michigan. Presently JSTOR has merged with ITHAKA in 2009. ITHAKA is also a not for profit organization dedicated to helping the academic community take full advantage of rapid information technologies. To utilise this resource, registration of libraries, institutions and individual are required. This enables users with user names and passwords to access and use the store. It helps libraries connect patrons to vital content, researchers discover, use and build upon wider range of information on a dynamic platform that facilitate collaboration in research regardless of location.

STATEMENT OF THE PROBLEM

Subscribing to and updating electronic databases involve financial commitment which many libraries cannot afford. The dwindling library funding which makes it difficult to purchase and subscribe to all needed online and most print books, journal titles, and other library resources has made it impossible for libraries to have recent and comprehensive collection, IITA stations based in different geographical zones with her library in the headquarters is no exception. With the information explosion via the Internet, and offline - CDs meeting the interdisciplinary research and its complexity, scientists in IITA still face some hindrances in the effective use of the e-databases. The main thrust of this work therefore is to unveil the reasons why agricultural scientists experience limitation or hindrances in actualising the full potential of the electronic databases that is intended to address their information needs and demand. This therefore is the whole essence of this research work.

RESEARCH OBJECTIVES

The general objective of the study is to investigate the use of electronic databases by IITA scientists.

The specific objectives are to:

- find out the stations of the IITA scientists using electronic databases
- ascertain the level of their usage of e-databases within five years: 2006-2010
- identify challenges encountered by the scientists
- Proffer ways of maximizing the use of e-databases by the scientists

RESEARCH METHODS

The study's design adopted was descriptive research design. The data collection tools used for this research work were IITA library records, interview and observation. The usage statistics of three major e-databases: TEEAL, Swetswise and JSTOR from the library records for the period of five years 2006-2010 were collected. The population of this study covers all the IITA scientists that used e-databases. Some scientists were interviewed to seek their opinion on the library e-resources, usage and challenges. Researcher's observation was drawn from the records analysis. Frequency, percentages and figures were used for the analysis and presentation of results.

The research questions that guided the study were:

- i. What is the frequency of IITA scientists using the e-databases?
- ii. What is the usage level of the e-databases by the scientists?

- iii. What are the challenges faced by the scientists against maximum use of e-databases?
- iv. What are the ways of improving use of the e-databases by the scientists?

DATA ANALYSIS

The data analysis used in this study is descriptive statistics which include frequency counts, simple percentage, and result presented in the tables and figures. Data gathered as shown in Table 1 revealed that out of the 105 scientists using e-resources, 85 (80.95%) were male while 20 (19.05%) were female. This implies that male scientists used e-databases than female scientists.

Table 1: Demographic Information

Gender	Frequency	Percentage
Male	85	80.95
Female	20	19.05
Total	105	100.00

Table 2 showed that all the IITA stations were aware of the library e-resources. They all used the e-databases while scientists based in Ibadan used more of the e-databases. This could be as a result of the fact that the station is the headquarters.

Table 2: Distribution of IITA scientists by stations

IITA Station	Frequency of Scientist	Percentage
Ibadan	61	58.10
Others	39	41.90
Total	105	100.00

Figure 1: Level of Usage of E-databases

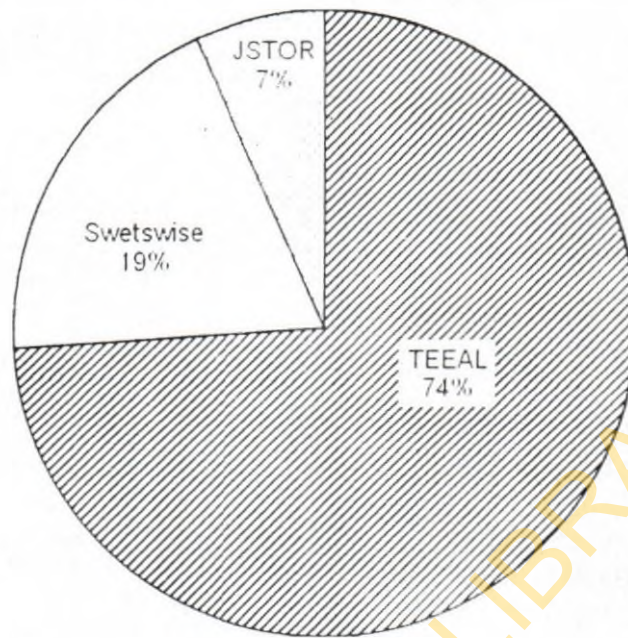


Figure 1: Use of TEEAL, Swetswise, JSTOR

The three databases which are TEEAL, Swetswise, and JSTOR are used by the IITA scientists. Mostly used as revealed by the library record was TEEAL (74%) followed by Swetswise (19%) and JSTOR (7%) databases as shown in Figure 1. The usage of TEEAL was high while Swetswise and JSTOR were low respectively. This could be related to the bottlenecks that surrounds their use. For instance, usernames, passwords, access to internet and IP authentication are required to access Swetswise and JSTOR whereas none of these are required to use TEEAL which can be accessed offline via computer and CDROMs.

Figure 2: Level of usage of e-databases between 2006 and 2010

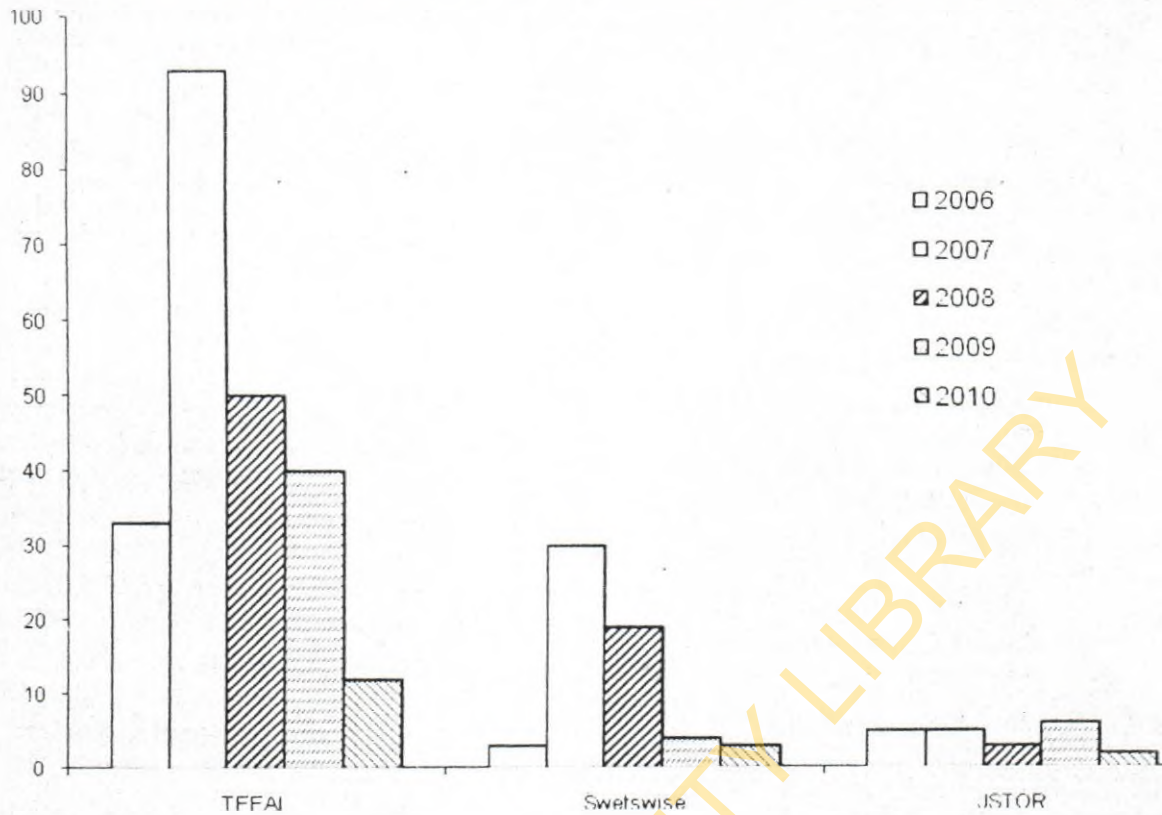


Figure 2 revealed that the level of usage of these databases varies per year. TEEAL was found outstanding throughout the year followed by Swetswise in 2007 and 2008 with low usage in 2006, 2009 and 2010, while JSTOR usage was low all through. This implies that scientists found answers to most of their information needs from the TEEAL database than other two e-databases within this period. The year 2007 was the prominent year that the TEEAL e-database was heavily used by the scientists, followed by Swetswise in year 2007 and JSTOR in 2009.

Moreover, it was confirmed that the e-databases were useful for scientists' research. It was also revealed that scientists declined in the usage of the three e-databases. This could be as a result of untimely update of these databases as well as the kind of information sought by the scientists that determined the e- database to be utilized. Scientists' opinions were sought on the challenges of the use of e-databases. Their responses revealed that some of the challenges include: the use of different access combinations on different platforms, unsteady Internet connectivity, lack of currency and skills to explore electronic databases effectively among others, are the constraints to their use.

DISCUSSION

The results revealed that more male scientists 85(80.95%) used the three databases than female 20(19.05%) respectively. This findings is in line with Oduwole and Sowole (2006) who found in their study that majority of the TEEAL users were male researchers. Despite the huge amount of money spent on the subscriptions to e-databases for use of the Institute researchers in which the scientists are the main focus, it was evident from data collected that the scientists used TEEAL (74%) heavily. This assertion supports Oduwole and Sowole (2006) and Oduwole and Akpati (2003) whose surveys' findings reported that e-databases such as TEEAL, CAB Abstracts were mostly use by academic staff, postgraduate and final year students while Swetswise (19%) and JSTOR (7%) were not optimally utilized. The findings of this study is in contrast with Tenopir (2003) who shows that researchers use of Internet based e-databases was high. The provision of adequate facilities in the developed countries compare to developing world could be responsible. Moreover, lack of currency, environmental and technological factors such as multiple access combination, low bandwidth, late or non update of e-databases among others were constraints. This corroborate the submission of Dauphin and Burge (2002) findings that shows that Asian and African institutions bandwidth were not sufficient for files download especially large files from the Internet, hence the heavy usage of TEEAL. However, there is need to promote the use of these e-databases among non-users in other to maximise the usage.

Furthermore, the study has established that scientists' geographical location was not a barrier to e-databases utilization, however, the inadequate infrastructural facilities was a challenge to online e-databases. The findings is in agreement with Oyelaran-Oyeyinka and Adeya (2004) study on Internet access in Africa: empirical evidence from Kenya and Nigeria as cited by Akande (2011) who revealed that internet use was challenged by infrastructural and cost involved issues. There is need for improvement in the area of infrastructural facilities to maximally utilise Internet based e-databases. This is supported by Thanuskodi (2010), who advocate for increase in the speed of the Internet access in order to enhance timely view and download from Internet based e-databases. This call for the attention of the library to enable their scientists make best use of these resources and in turn justify its renewal and sustainability by the management of the organization.

CONCLUSION AND RECOMMENDATION

This paper concluded that IITA agricultural scientists found the three e-databases useful. The use of TEEAL was found to be the most prominent followed by Swetswise and JSTOR respectively. Different geographical zones of the scientists' stations were not a serious barrier to the use of e-databases since they can be remotely accessed. However, currency of these databases, users' identity protocols among others affects its optimal use. In view of the findings, the researcher recommends the following:

- i. Timely update of electronic databases is essential for agricultural researchers' information use.
- ii. Deploying of federated search tools such as summon, primo, voyager etc. to integrate all the e-databases and other electronic sources on one platform for quick, better and ease of access and use. This would not require using multiple usernames and passwords nor moving from one database platform to another before usage since choices as to the kind of resources the users' wishes to consult will be made on the platform.
- iii. The Library should provide the IITA scientists with modern Information Communication Technology (ICT) tools like You Tube, Moodle, Live chat, etc. in order to develop their information literacy skills. For instance, with live chat on, librarians can communicate with the scientists on their information needs and proffer immediate solution. Such tools would bring them together virtually or on one-on-one basis to foster closer relationship and better consultations with the library staff. Scientists can access, play and listen to electronic instructions and playbacks at their own convenience and use knowledge gained to explore library resources effectively.
- iv. Research institutes, especially agricultural based should increase library funding to enhance better products and service delivery in this digital age.
- v. Private and public partnerships should be embraced to better improve the infrastructural facilities among the developing nations, institutions and their libraries.

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