

**Availability of Electronic Resources for Service Provision in University Libraries in Ogun State Nigeria**

By

**Isiakpona, Chidi Deborah and Ifijeh Goodluck****Abstract**

This study evaluates the availability of electronic resources for service provision in university libraries in Ogun State Nigeria and how they affect the effective provision of electronic information resources in selected University libraries South West Nigeria. The research design used for the study was the survey (descriptive) research design; the stratified random sampling was used to collect data from the study population which was a total of one thousand and thirty-eight (1038) academic staff and librarians from Federal University of Agriculture, Covenant, and Babcock universities. The instruments used to collect data were questionnaire and structured interview; the retrieved data was also analyzed through the use of frequency distribution and correlation analysis. Findings revealed that the university libraries have electronic databases; however, the most common of the databases was AGORA while IEE was the least common. The study also revealed that majority of the University libraries have adequate basic infrastructure for effective electronic information services. The major challenge involved in the provision of electronic resources among the university libraries was electricity power outage; Findings further showed that there was no significant relationship between the availability of databases and effective electronic resources provision ( $r = .071$ ,  $N = 414$ ,  $P > .05$ ) and also it revealed that there is a significant relationship between the availability of basic infrastructures and effective electronic resources provision ( $r = .523^{**}$ ,  $N = 414$ ,  $P < .01$ ). The study recommended that the provision of basic infrastructure that support the effective use of electronic resources should therefore be made readily available, this will help to ensure that the electronic resources acquired by the library are put into maximal use by the library clientele, thereby ensuring the achievement of the library's objective which is satisfying the users, information needs.

**Introduction**

In the present digital era like ours, the world is rapidly being transformed to a global village especially with the introduction of Information Technologies in almost every aspects of life such as, education, agriculture, energy, manufacturing etc. The 'driver' of this development is information. The library in the 21<sup>st</sup> century serves as a good source of acquiring and accessing viable, accurate and tangible information; it is sometimes referred to as "the temple of scholarship", the life blood and academic heart of any institution- both symbolically and in terms of its physical location (Freeman, 2005). The main goal of the university library is to provide information resources to enhance teaching, learning and research. The library's driving philosophy is providing the right information for the right patron at the right time. This philosophy therefore makes a sine qua non for any library to acquire electronic information resources if they must retain patronage in this era. Electronic information resources found in libraries include online databases, CD ROMs, and internet. It is of essence to note here that these electronic resources are quite expensive to acquire especially considering the slim budget allocations of university libraries (Ifijeh, 2012). For libraries to make effective use of these electronic resources, they need basic infrastructure like hardware and software.

This study therefore investigates the availability of electronic resources and their basic infrastructure in

University libraries. It also examined the effect of databases and basic infrastructure on effective provision of electronic services in selected University libraries.

**Objectives of the Study**

1. Determine available electronic databases in the selected Universities;
2. assess the adequacy of basic infrastructures for effective electronic resources provision in the University libraries;
3. examine the level of effectiveness of electronic resources provision in the University libraries;
4. examine the extent to which availability of basic infrastructure and database affects effective electronic information provision in university libraries in Ogun state and
5. investigate challenges associated with the electronic resources provision in the libraries

**Hypotheses**

1. There is no significant relationship between availability of Database and effective Electronic Resource provision.
2. There is no significant relationship between basic infrastructures and Effective Resources provision.

**Literature Review**

Electronic information resources are sometimes referred to as e-resources. They are invaluable

research tools that complement the print-based resources in a traditional library setting (Egberongbe, 2011). Okiki and Asiru (2011) stated that electronic information resources are “products of information and communication technologies and they have been found relevant to the learning and research process in Universities.” Examples of these electronic information resources are e- journals, e-books, Databases, OPAC, e- thesis and dissertations, internet, etc. In a study carried out by Bassi and Camble (2011) it was revealed that the internet is the most highly used e- resource; 392(41.05%) of the 955 respondents make regular use of the internet and this was closely followed by the use of e- journals; 125 (13.09%) respondents indicated their regular use of e- journals. The high rate in the use of these electronic resources could be accredited to the fact that they usually contain current information which is highly treasured by academics. The use of these electronic resources has brought about a revolution in the activity of information provision and dissemination. The use of Electronic information resources provides a better platform and more opportunities for users being that it has obvious advantages over the print resources. (Afebende and Uyanah, 2008).

Some of the advantages of the use of electronic information resources when compared with print information resources include the conservation of space and time. The user can have quick access to information by making a combination of likely key words relate to his/her search. The speed in retrieval of needed information is a major advantage that electronic resource has over the print resource. (Ray and Day, 1998). Other advantages of electronic resources include currency, easy and multiple accesses. Perhaps the most used electronic resource in libraries today is online database. According to Moghaddam (2009), a database is a collection of data that is organized for easy storage and access. These include paper-based tools like dictionaries and libraries of print materials. From this, we can say that online databases are collection of data which are organized for easy access and retrieval through the internet; that is access is made available through the web. Adeyemi (2009) noted that “online databases contain information on specific subjects which vary in format”; with the organization of the resources contained in these online databases according to their various subject and disciplines, the library user faces less challenge of large recall and low precision. In order words with the use of online databases, the level of precision during information retrieval is higher especially when compared with the use of internet. The user when

retrieving information through the internet may get a drastically high recall of information materials whether useful or not so far it is related to the search term but when making use of online databases the reverse is the case. This is because these online databases contain only structured information which will be useful to the library clientele or information seeker.

Some examples of electronic database being used today in academic libraries include Journal Storage (JSTOR), AGORA, HINARI, EBSCO, Science Direct, OARE, MIT Open Courseware, etc. Kahn, Zaidi and Bharati (2009) also opined that “the literature shows on-line databases with their retrieval network capabilities, have been gradually replacing many of their printed counterparts”. This is because library users especially academics have little or no time to go through the rigors of searching for print resources to make use of, they therefore settle for electronic databases. The availability of electronic information resources could be smoothly managed in the library with the existence of basic infrastructure such as internet facilities, bandwidth, capable technical support, computer systems, electricity power supply, etc. Oketunji (2006) opined that the future of libraries is very much linked to their abilities to harness and sustain connectivity to available infrastructures as a base for providing effective and efficient access to information by their clientele. That is the availability of necessary infrastructure is the underlining factor for effective provision of electronic resources in libraries. It is tantamount to wastage of the limited available resources of the university library if a lot of money is spent on acquiring electronic information resources and these resources are not put to maximum utilization by the university community and those from the external context. The electronic resources made available by the university libraries should be used maximally and this can be possible only when the basic infrastructure are put in place.

#### **Methodology of the Study**

The research design for this study is survey (descriptive), which is a systematic approach of collecting data to find out respondent’s opinion. The population of this study is made up of the University and Systems librarians and the academic staff (lecturers) of the universities under study which are Babcock University, Covenant University and Federal University of Agriculture. The overall total population for the study is one thousand and thirty-two (1032). The instruments used to elicit

information from respondents were the questionnaire and interview

**.Presentation of Data**

**Table 1: Sample Size according to Academic Staff Categories**

University under study	Librarians	Academic Staff				
		College	Population	Wh=Nh/N	nh=nWh	%
Babcock University	2	SEH	53	0.05	27	5%
		SMSS	73	0.07	37	7%
		SLSS	7	0.01	3	1%
		SST	92	0.09	46	9%
Covenant University	2	CDS	167	0.16	83	16%
		CST	199	0.19	100	19%
Federal University of Agriculture	2	COLAMRUD	51	0.05	25	5%
		COLANIM	56	0.05	28	5%
		COLENG	38	0.04	19	4%
		COLERM	56	0.05	28	5%
		COLHEC	36	0.03	18	3%
		COLNAS	99	0.10	50	10%
		COLPLANT	61	0.06	30	6%
	COLVET	44	0.04	22	4%	
<b>TOTAL</b>	<b>6</b>		<b>1032</b>		<b>516</b>	<b>100%</b>

Where Wh represents the Weight of each stratum  
 nh represents the sample taken in each stratum  
 Nh represents the size of each stratum  
 N represents the size of total population

**Table 2: Available Electronic Databases in the Universities Studied**

S\N	Items	Not available	Available
1	EBSCOHOST	178 43.0%	236 57.0%
2	HINARI	285 68.8%	129 31.2%
3	JSTOR	255 61.6%	159 38.4%
4	OARE	347 83.8%	67 16.2%
5	MIT	315 76.1%	99 23.9%
6	AGORA	106 25.6%	308 74.4%
7	Science direct	230 55.6%	184 44.4%
8	IEE	374 90.3%	40 9.7%

**Table 3: Level of Adequacy of the Basic Infrastructures for Electronic Resource Provision**

Adequacy of basic infrastructures	Frequency	Percentage
Very adequate	78	18.8
Adequate	198	47.8
Quite adequate	132	31.9
Not adequate	6	1.4
Total	414	100.0

Table 2 reveals the available databases for electronic resources available in the University libraries studied. 178(43.0%) respondents indicated that EBSCOHOST was not available while 236(57.0%) respondents indicated that it was available. 285(68.8%) respondents indicated that HINARI it was not available while 129(31.2%) respondents indicated that it was available. A total of 255(61.6%) respondents indicated that JSTOR was available while 159(38.4%) respondents indicated that it was available while 347(83.8%) respondents noted that the OARE database was not available and 67(16.2%) respondents indicated that it was available. 315(76.1%) respondents indicated that MIT was not available while 99(23.9%) respondents indicated that it was available. A total of 106 (25.6%) respondents indicated that AGORA was not available while 308 (74.4%) respondents indicated that it was available. 230(55.6%) respondents indicated that Science Direct was not available while 184(44.4%) respondents indicated that it was available. As for the IEE database, 374(90.3%) respondents indicated that it was not available in their library while 40(9.7%) respondents indicated that it was available. From the data represented in table 4.3 above, it was observed that AGORA was the most available followed by EBSCOHOST, while IEE was the least available database.

Table 3 shows that 78(18.8%) respondents indicated that the basic infrastructures were very adequate, 198(47.8%) indicated that the basic infrastructures for effective electronic resources were adequate, 132(31.9%) indicated that infrastructures were quite adequate, while 6(1.4%) respondent indicated that infrastructures for effective electronic resources were not adequate respectively.

Table 3b further represents the level of adequacy of the basic infrastructures used for electronic resources provision in the Universities studied. The table shows

that the available computer systems are always in good and workable conditions (Mean =3.96) and was ranked highest by their mean score rating and was followed by the technical support rendered by the library staff when using the e-resources (Mean =3.96). The level of comfort derived when using the furniture at the work station yielded a Mean =3.93while the provision made to access the e-resources within and outside the library had a Mean of 3.79. Infrastructure put in place for alternative electricity power source had a Mean score of 3.69 while the sufficiency of computer systems made available for accessing the resources are yielded a Mean =3.63. The speed of the internet connectivity and the regular and constant electricity supply had the mean scores of 3.45 and 3.21 respectively.

Table 4 represents the level of effectiveness of the electronic resource provision in the university libraries. A total of 347 (83.8%) of the respondents indicated that the electronic resources provided cuts across all the disciplines, 240 (58%) respondents agreed that the available databases are sufficient enough but yet only a total of 21 (5%) respondents agreed that the level of satisfaction derived is high; this could be attributed to the speed at which resources are downloaded which only 4.5% (19) and 20.3%(84) of the respondents agreed and strongly agreed that it is fast, yielding a mean score of 3.57. A total of 73(17.6%) respondents agreed that there is regular training on the use of electronic resources while 195 (47.1%) agreed that regular training is carried out on the use of electronic information resources.

From the variables measured in 3b, it is evident that the level of provision of infrastructure made available for speedy internet connectivity and constant supply of electricity is considerably low with the mean scores of 3.45 and 3.21 respectively.

**Table 3b: Basic Infrastructures and Effective Electronic Resource Provision**

S\N	Items	SD	D	U	A	SA	Mean	S.D
1	The available computer system are always in good and workable conditions	13 3.1%	29 7.0%	19 4.6%	252 60.9%	101 24.4%	3.96	.92
2	The library staff are always available to render support in case of difficulties when using the e-resources	6 1.4%	16 3.9%	61 14.7%	235 56.8%	96 23.2%	3.96	.82
3	The furniture at the work station are comfortable	21 5.1%	25 6.0%	22 5.3%	238 57.5%	108 26.1%	3.93	1.01
4	The e-resources can be assessed within and outside the library	29 7.0%	41 9.9%	47 11.4%	166 40.1%	131 31.6%	3.79	1.19
5	In case of power outage, an alternative power source is used	14 3.4%	91 22.0%	38 9.2%	137 33.1%	134 32.4%	3.69	1.23
6	The number of computer systems available for accessing the resources are sufficient	38 9.2%	22 5.3%	66 15.9%	216 52.2%	72 17.4%	3.63	1.11
7	The speed of the internet connection is constant and fast	15 3.6%	103 24.9%	54 13.0%	165 39.9%	77 18.6%	3.45	1.16
8	There is constant electricity supply at the various workstations	23 5.6%	150 36.2%	49 11.8%	103 24.9%	89 21.5%	3.21	1.29

**Table 4: Level of Effectiveness of Electronic Resource Provision**

S\N	Items	SD	D	U	A	SA	Mean	S.D
1	The e-resources available cuts across various disciplines	19 4.6%	9 2.2%	39 9.4%	226 54.6%	121 29.2%	4.02	.94
2	There is technical support provided for users of the e-resources	14 3.4%	15 3.6%	48 11.6%	257 62.1%	80 19.3%	3.90	.87
3	The resources retrieved are current and up to date	18 4.3%	19 4.6%	54 13.0%	225 54.3%	98 23.7%	3.88	.96
4	The databases made available for accessing e-resources are sufficient enough	8 1.9%	28 6.8%	65 15.7%	240 58.0%	73 17.6%	3.83	.87
5	The level of satisfaction get from using the e-resources is very high	15 3.6%	233 56.3%	67 16.2%	21 5%	78 18.8%	3.72	.99
6	The speed at which the resources are downloaded is fast	177 42%	45 10.9%	89 21.5%	19 4.5%	84 20.3%	3.57	1.12
7	There is regular training on the use of the electronic databases	23 5.6%	73 17.6%	63 15.2%	195 47.1%	60 14.5%	3.47	1.11

**To what extent does the availability of basic infrastructures and database affect the effective provision of Electronic Resources in university libraries in Ogun State?**

In the interview conducted with the Systems librarians in Covenant, Babcock and the Federal University of Agriculture, it was discovered that the level of availability of basic infrastructures affect the effective provision of electronic resources. They noted that the electronic resources are made available but they users usually have the challenge of inadequacy of basic infrastructure especially dedicated bandwidth which automatically hampers

the effective use of the resources. One of the Systems librarians also noted that sometimes these electronic resources are not fully utilized because of the challenge of electricity supply and provision of back-up when the need arises. Hence even when the resources are provided, without the proper infrastructures being put in place, these resources will not be effectively used.

**Challenges involved in the Provision of Electronic Resources in the University Libraries**

The interview with the librarians in the three university libraries revealed that the major challenge

encountered in the provision of electronic resource provision is the challenge of insufficient bandwidth which usually leads to network fluctuation and sometimes slow speed in the process of downloading resources. They also noted the challenge of inadequate electricity supply, one of the Systems librarians interviewed noted that the library should have a stand-by generator in workable condition to combat the problem of electricity.

Table 5 reveals the rating of the challenges involved in the provision of Electronic Resources in the University libraries. 116 (28%) and 121(29.2%) respondents strongly agreed and agreed respectively that electricity power outage was a challenge posed in the process of making use of electronic

information resources. It was also revealed that electricity power outage was rated as the highest challenge faced with a mean score of 3.34; this was closely followed by the challenge of infrequent internet access with a mean score of 3.21. Phobia for the use of information technologies was reported as the least challenge encountered; 22(5.3%) respondents indicated that this posed a challenge to them and this challenge yielded a mean score of 1.69. Large volume of irrelevant information and lack of technical support from library staff yielded mean scores of 2.25 and 2.00 respectively. The challenge of the use of unfriendly software had a mean score of 2.10 while 1.87 was the mean score returned for the challenge of computer illiteracy.

**Table 5: Challenges of Electronic Resource Provision**

S/N	Items	SD	D	U	A	SA	Mean	S.D
1	Electricity power outage	53 12.8%	107 25.8%	17 4.1%	121 29.2%	116 28.0%	3.34	1.44
2	Infrequent internet access	62 15.0%	110 26.6%	11 2.7%	140 33.8%	91 22.0%	3.21	1.43
3	Large volume of useless information retrieved	139 33.6%	146 35.3%	39 9.4%	67 16.2%	23 5.6%	2.25	1.23
4	Unfriendly software	121 29.2%	190 45.9%	53 12.8%	40 9.7%	10 2.4%	2.10	1.01
5	Lack of technical support from library staff	154 37.2%	157 37.9%	58 14.0%	37 8.9%	8 1.9%	2.00	1.02
6	Lack of I.T skills	179 43.2%	146 35.3%	50 12.1%	34 8.2%	5 1.2%	1.89	.99
7	Computer illiteracy	211 51.0%	146 35.3%	25 6.0%	24 5.8%	8 1.9%	1.72	.95
8	Phobia for the use of information technologies	209 50.5%	157 37.9%	26 6.3%	10 2.4%	12 2.9%	1.69	.91

**Test of Hypotheses**

**Ho1: There is no significant relationship between availability of Database and effective Electronic Resource provision.**

**Table 6: Test of Relationship between Availability of Databases and Effective Electronic Resource Provision**

Variable	Mean	Std. Dev.	N	R	P	Remark
Availability of database	02.9517	1.6059	414	.071	.147	n.s.
Effective electronic resources	26.4034	4.2448				

**Ho2: There is no significant relationship between basic infrastructures and Effective Resources provision**

**Table 7: Test of Relationship between Basic Infrastructure and Effective Electronic Resources Provision**

Variable	Mean	Std. Dev.	N	R	P	Remark
Basic infrastructures	29.6353	5.0542	414	.523**	.000	Sig.
Effective electronic resources	26.4034	4.2448				

\*\* Sig. at .01 level

Table 6 shows the relationship between the availability of databases and effective electronic resources provision. From the data analyzed in table 4.7, a conclusion can be drawn that there is no significant relationship between availability of databases and effective electronic resources provision ( $r = .071$ ,  $N = 414$ ,  $P > .05$ ). Therefore the null hypothesis is accepted. It is therefore certain that there is no significant relationship between the availability of databases and effective provision of electronic resources.

Table 7 shows the relationship between the availability of basic infrastructures and effective electronic resources provision in the university libraries study. From the data analyzed in table 4.8, a conclusion can be deduced that there is a significant relationship between the availability of basic infrastructures and effective electronic resources provision ( $r = .523^{**}$ ,  $N = 414$ ,  $P < .01$ ). Therefore the null hypothesis is rejected. It is therefore established that there is a significant relationship between the basic infrastructures and effective provision of electronic resources.

### Conclusion and Recommendation

The utilization of electronic resources in university libraries is continually on the increase today, this could be attributed to the breakthrough in information and communication technologies as well as the need to provide users with current and accurate information in an age of information 'tsunami'. These electronic resources are usually made available in diverse forms but most commonly in the form of databases. Databases are only accessible to the library users through the use of basic infrastructure such as electricity, computer systems which include hardware, software and human ware, and internet facilities. The information contained in these electronic resources can only be accessed when these infrastructures are put in place. It is therefore imperative that Libraries put these infrastructures in place to ensure effective use of the electronic resources.

It is therefore recommended that university libraries should have their own stand by generating set, this will be very useful especially in the situation of power outage; besides the generator; the university management should make effort to generate their own source of electricity; University libraries should also have their own dedicated bandwidth. This will definitely solve the challenge of network fluctuation and slow speed in the process of downloading information. Furthermore the university and library management should inculcate a good maintenance

culture. There should be regular maintenance of equipment and infrastructure put in place for the effective provision of electronic resources. There should be periodic servicing of all these equipment and proper replacements should be made where necessary; there should be more in depth training of the library clientele and even the library staff in the proper use of electronic information resources.

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