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# Utilization and User Satisfaction with ICT Services Provided in Public Libraries in Nigeria

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**Abstract**

*The study is designed to examine the utilization and user satisfaction with ICT services provided in public libraries in Nigeria. The study adopted survey research designs. The population of this study comprised of 501 library staff working in the public libraries in south-east and south-south zone of Nigeria. It was revealed that users utilize the available ICT services provided and users are not satisfied with ICT services provided. Lack of affordable electric power supply, inadequacy of trained staff to implement ICT, inadequate funding, high cost of maintenance of ICT equipment, lack of affordable internet services providers, inability to provide strong connectivity and poor standardized hardware and software provisions were identified as factors affecting the provision of ICT services in the libraries. Only Public libraries in south-east and south-south were used as case study and may not be used in generalizing what is obtainable in public libraries in other geo-political zones. The empirical evidences cannot be used to generalize for academic and other libraries. The findings have provided empirical evidences on the extent of users' utilization and satisfaction in public libraries. The findings can be used by State Librarians or Director of Public Libraries in making ICT-related policies. This study has not been carried out before and has not been published anywhere.*

**Keywords:** *ICT, Public Libraries, Users, Utilization, South-East, South-South, Nigeria*

## 1.1 Introduction

Information and Communication Technology plays a vital role in bringing out changes in our society. As technology becomes more sophisticated and more affordable, the range of services that are provided also increases our life style, our business, our educational system, our political and our social values (Siddike, Munshi, & Sayeed, 2011). Information Communication Technologies (ICTs) have become key tools and had a revolution impact on how library and information services are offered. It is now commonly accepted that ICT and systems provide many benefits to library and information services. No doubt, Information and Communication Technology (ICT) applications are rapidly changing all over the

world and have tremendous impact on nearly every library operations, resources, services, staff and users. Without access to ICT, however, many library and information centres are in danger of further isolation and exclusion from the global environment. Therefore, in this era, when new technologies are introduced almost daily, it is essential for librarians to keep up with ICT developments (Adekunle, Omoba & Tella, 2007).

The application of ICT in Nigerian libraries according to Elisha (2006) is justified in that it provides access to learning resources, information and knowledge hitherto inaccessible by reason of distance, resources and availability of relevant technology. Libraries and information centres have been using ICT based resources and services to satisfy the diverse information needs of their users (Mohammed, 2007).

Information and Communication Technology (ICT) is just the technology of transmitting digital information (Uhegbu, 2007). It has become the road map for sustainable dissemination of digital records and feedback. Advances in ICT applications especially in digitized network and networking from the 21st century have made information access, retrieval and dissemination and user convenience, conducive and less cumbersome (Harry & Asiegbu, 2010). Information and Communication Technology (ICT) has continued to make substantial contribution to the ever perpetuating information society and ICT has overtaken every aspect of library and information services (Chukwuma-Nwosu, 2008).

In this age of information and communication technology, the role of University Libraries has changed radically in developed countries. Being spread to the under-developed countries, the adequate provision of ICT and its application becomes very imperative and this enhances users satisfaction in the utilization of information resources in libraries. The introduction of ICT in public libraries has tremendously enhanced service delivery. There is remarkable rise in the use of ICT as many of the libraries activities are now ICT driven and which has brought unprecedented changes and transformation to academic library and information services (Krubu & Osawaru, 2011).

A public library, as a type of library, is regarded as the local gateway to knowledge, providing basic condition for lifelong, independent, decision-making and cultural development of the individual and social groups (IFLA/UNESCO, 1995). International Federation of Library Associations (2001) also define public library as "an organisation established, supported and funded by the community, either through local, regional or national government or through some other form of community organization". IFLA (2001) further opines that a public library provides access to knowledge, information and works of the imagination through a range of services and is equally available to all members of the community regardless of race, nationality, age, gender, religion, language, physical and mental limitations, economics and employment status and educational attainment.

In agreement, Nwabueze and Ibeh (2013) posit that the public library is a library established to provide information and materials for various groups of users like civil servants, businessmen, students and children. It is also an institution that exists to serve the interests of all members of the public and receive its financial support in whole or part from public fund. It is a state, local or town affair, authorized by the state law, supported from public fund, and operated for the benefit of general public (Ozuluonye, 2006). The main function of a public library is to acquire, select, organize and disseminate information needed by its users. It serves as a repository for

the culture and recorded history of the people and as a place where people can go freely in search of information for self-education and pleasure. By performing these functions, a public library system will be in a position to enhance the educational, economic and social lives of the populace. It is expected that a public library will make its services available to all categories of users in the community regardless of race, colour, nationality, sex, religion, language and educational attainment.

From the foregoing, it is obvious that the provision of ICT is now an essential component in public library services to effect good users satisfaction. The major thrust of this research therefore is to investigate the provisions of ICT services and user satisfaction in public libraries in South- East and South-South geo-political zones of Nigeria. Several studies on Information and Communication Technologies have been carried out in the field of library and information services, but it appears there is lack of emphasis on the manner in which the concept is related to public libraries in South-East and South-South zones of Nigeria and this is the main thrust of this study and the gap in knowledge which this study has filled.

## 1.2 Purpose of the Study

The main purpose of this study was to investigate the utilization and user satisfaction with ICT services provided in public libraries in Nigeria. Specifically, this study was designed to:

i. ascertain the extent of utilization of the available ICT services in public libraries in South-East and South-South geo-political zones of Nigeria;

ii. determine the level of users' satisfaction derived from ICT services provided in public libraries in South-East and South-South geo-political zones of Nigeria;

iii. examine the problems influencing the provision of ICT services in public

libraries in South-East and South-South geo-political zones of Nigeria; and

## 1.3 Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

$H0_1$ The mean scores of the librarians on the extent of users' utilization of the available ICT services in the public libraries is not significant.

$H0_2$ The mean scores of the librarians on the level of users' satisfaction with ICT services provided is not significant.

## 2.1 Review of Related Literature

Kumar and Singh (2011) in their study on access and use of electronic information resources by Scientists of National Physical Laboratory in India using a random sample of 75 scientists from different fields of physical sciences available at the time of the study (with a response rate of 80 percent) showed the satisfaction level of accessing and using the required e-information where about 73.3 percent of the scientist are very highly satisfied with the quality of e-information accessed and used; another 16.7 percent are highly satisfied; while 10 percent are somewhat satisfied.

Emojorho (2010), in his study on ICT and collection management in public libraries which is a survey of South-South zones of Nigeria, using an ex-post-facts design with 147 respondents as sample size reported that new technological environment has reached only a few public libraries in the South-South Nigeria, with only a few ICT facilities are available. Onu and Uche in Onwubiko (2004) and Unagha (2005) argued that ICT's have been put to effective use in our libraries and as such cannot be said to be effective research tools for scholars and students alike.

Khan (2011) assessed the level of

satisfaction, and users were asked to reply the degree at what level they are satisfied: majority of the users (38.44%) are "neither satisfied nor dissatisfied"; a total of 31.30% users are "satisfied"; further 12.24% are "highly satisfied"; only 14.28% users are "dissatisfied"; and 3.74% are "highly dissatisfied. Singh, Sharma and Negi (2009) affirmed that ICT- based LIS services are efficient and effective mechanism of delivering the digital contents pin-pointedly and exhaustively. This apparently points to the fact that ICT services are highly utilized in the libraries under studied. It was revealed that ICT services are being utilized because they are cost effective and user friendly for meeting the information needs of users.

Oyadonghan and Eke (2011) in their study identified insufficient availability of IT resources as the highest reason that inhibited students' use of ICT. Also, Faboyinde (2006) in a study, articulated the following as factors militating against full utilization of the technology and they are: operational orientations, problems of financial base, systemic problems, budgetary preferences, low human capacity building and lack of political will Nwabueze and Ibeh (2013) in their study of extent of information and communication technologies integration in public library services in Anambra State, Nigeria revealed that libraries with some ICT facilities lack the necessary accompaniments for proper integration of ICT in the libraries, and the percentage of ICT presence is very low. Anyanwu and Ossai-Onah (2011) in their study revealed that the major constraint to use of ICT facilities include high cost of facilities,

limited access, irregular power supply, lack of training, in competence on the part of both staff and student, lack of training opportunities and constraints in the purchase of equipment. It was further revealed that the ICT staff stated that ICT facilities are expensive and most of them could not be purchased because the institution lacks the financial resources to do so. Nnadozie and Edom cited in Bamidele and Bamigboye (2012) reported that inadequate funding of ICT projects, shortage of computer literates, ICT-compliant personnel and high cost of procurements and repairs for ICT components, compound the problem of ICT application and utilization. Also, poorly developed infrastructure, epileptic or erratic power supply, poor telecommunication and inadequate manpower are some of the peculiar problems affecting the use of ICT facilities.

## 3.1 Research Methods

The study adopted survey research designs. The population of this study comprised of 501 library staff working in the public libraries studied. The research study covered both South-East and South-South geo-political zones of Nigeria. South-East geo-political zone in Nigeria is made up of five (5) states namely Abia, Anambra, Ebonyi, Enugu and Imo while the South-South geo-political zone is made up of six (6) states namely Akwa-Ibom, Beyelsa, Cross River, Delta, Edo and Rivers. The distribution of the population according to states was shown below.

## Table 1: Tabular Distribution of the Population according to the States

| Geo-political Zone | States | Population of Librarians |
|---|---|---|
| South-East | Abia | 36 |
| | Anambra | 47 |
| | Ebonyi | 38 |
| | Enugu | 62 |
| | Imo | 43 |
| South-South | Akwa Ibom | 44 |
| | Bayelsa | 23 |
| | Cross River | 59 |
| | Delta | 53 |
| | Edo | 41 |
| | Rivers | 55 |
| | Total | 501 |

**Source: Field Survey 2016**

The researcher studied the entire population (i.e. 501 Library staff). This was because the size of the population was manageable within the time frame set for this study and could be studied. The census enumeration sampling technique was adopted for the study.

The instrument used to elicit data for this study was Likert-type 4-point rating scale developed by the researcher after a thorough review of literature. The instrument for data collection contains 16 items on level of users' utilization of available ICT services; 9 items on level of users' satisfaction with available ICT services; and 13 items on factors affecting the provision of ICT services in public libraries.

In order to ensure maximum return of the completed rating scale, the researcher distributed them to the respondents with the help of a research assistant. The research assistant was instructed on how to administer the instrument; collect, and collate the information given. The instrument was administered to librarians in public libraries who were seen in the premises at the time of the visit. For those who were not seen, arrangement was made to meet them on seat the next time. Data were collected and collated for the study. The research questions were answered using mean and standard deviation. The presentations are organised according to the research questions.

### 4.1 Results and Findings

**Research Question One:** What are the mean scores of librarians on the extent of users' utilization of the available ICT services in public libraries in South-East and South-South geo-political zones of Nigeria?

Summary of Analysis and Result Concerning the Mean Scores of Librarians on the Extent of Users Utilization of the Available ICT Servi ces

**Table 2:** *Mean and Standard Deviation Scores of the Librarians on Extent of Users Utilization of the Available ICT Services*

| N | $\bar{X}$ | $S$ | $\mu$ | Remark |
|---|---|---|---|---|
| 501 | 40.62 | 4.08 | 40.00 | Utilized |

N = Sample Size; $\bar{X}$ = Sample Mean; $S$ = Standard Deviation; $\mu$ = Population Mean.

Data in Table 2 shows that the mean and standard deviation rating scores of the librarians on the utilization of the available ICT-based services are 40.62 and 4.08 respectively. This mean is greater than the criterion or expected mean of 40.00, and as a result indicates that the available ICT-based services are being utilized.

**Hypothesis One:** The mean scores of the librarians on the extent of users' utilization of available ICT services is not significant.

**Table 3: *Summary of Analysis and Decision Concerning the Extent of Users utilization of Available ICT Services in the Libraries***

| N | $\bar{X}$ | $S$ | $\mu$ | $z_{cal}$ | $z_{crit}$ | $df$ | $sign.$ | Decision |
|---|---|---|---|---|---|---|---|---|
| 501 | 40.62 | 4.08 | 40.00 | 3.40 | 1.645 | 499 | 0.05 | Reject $H_{0:}$ |

N = Sample size; $\bar{X}$ = Sample Mean; $S$ = Standard Deviation; $\mu$ = Population Mean; $z_{cal}$ = Calculated z-value; $z_{crit}$ = Critical z-value; $df$ = degree of freedom; $sign$ = level of significant

From Table 3, it can be observed that the sample mean is 40.62, the population mean is 40.00, while the standard deviation is 4.08. Also, the $z_{cal}$ is 3.40, while the $z_{crit}$ is 1.645. Since, the $z_{cal}$ of 3.40 is greater than the $z_{crit}$ of 1.645 the null hypothesis is rejected. Hence, the mean scores of the librarians on the extent of users' utilization of the available ICT services in the Libraries are significantly greater than the expected mean of 40.

**Research Question Two:** What are the mean scores of librarians on extent of users' satisfaction with ICT services provided in public libraries in South-East and South-South geo-political zones of Nigeria?

**Table 4: Summary of Analysis and Result Concerning the Mean Scores of Librarians on the Level of Users Satisfaction with ICT Services Provided in the Libraries**
***Mean and Standard Deviation Scores of Librarians on the Level of Users Satisfaction***

| N | $\bar{X}$ | $S$ | $\mu$ | Remark |
|---|---|---|---|---|
| 501 | 21.88 | 2.97 | 22.50 | No Satisfied |

N = Sample Size; $\bar{X}$ = Sample Mean; $S$ = Standard Deviation; $\mu$ = Population Mean.

Data in Table 4 shows that the mean and standard deviation rating scores of the librarians on extent of users' satisfaction with ICT services provided in the library are 21.88 and 2.97 respectively. This mean is lower than the criterion or expected mean of 22.50, and as a result indicates that the users are not satisfied with the available ICT-based services are being utilized.

**Hypothesis Two:** The mean scores of the librarians on the level of users' satisfaction with ICT services provided is not significantly greater than the expected mean of 22.50.
**Summary of Analysis and Decision Concerning the Level of Users' Satisfaction with ICT Services Provided**

**Table 5:** *The Sample Mean, Population Mean, Standard Deviation, Calculated z -value, Critical z-value and the Degree of Freedom*

| N | $\bar{X}$ | $S$ | $\mu$ | $z_{Cal}$ | $z_{Crit}$ | $df$ | sign. | Decision |
|---|---|---|---|---|---|---|---|---|
| 501 | 21.88 | 2.97 | 22.36 | \|-4.67\| | 1.645 | 499 | 0.05 | Reject $H_{02}$ |

N = Sample size; $\bar{X}$ = Sample Mean; $S$ = Standard Deviation; $\mu$ = Population Mean; $z_{Cal}$ = Calculated z-value; $z_{Crit}$ = Critical z-value; $df$ = degree of freedom; $sign$ = level of significant.

From Table 5, it can be observed that the sample mean is 21.88, the population mean is 22.36, while the standard deviation is 2.97. Also, the absolute value of the $z_{Cal}$ is 4.67, while the $z_{Crit}$ is 1.645. However, since the $z_{Cal}$ is negative and is less than the $z_{Crit}$ of 1.645 the null hypothesis is accepted. Hence, the mean rating scores of the librarians on the level of users satisfaction with ICT services provided is significantly less than the expected mean of 22.50.

**Research Question Three:** What are the factors affecting the provision of ICT services in public libraries in South-East and South-South geo-political zones of Nigeria?

**Summary of Analysis and Result Concerning the Factors Affecting the Provision of ICT Services in the Public Libraries**

**Table 6:** *Item-by-Item Response Mean and Standard Deviation Scores on the Factors Affecting the Provision of ICT Services in the Libraries*

| S/N | Item | $\bar{X}$ | Std | Remarks |
|---|---|---|---|---|
| 1. | Lack of affordable internet services providers | 2.55 | 1.00 | Positive |
| 2. | Inability to provide strong connectivity | 2.54 | 0.99 | Positive |
| 3. | Lack of affordable electric power supply | 2.95 | 0.88 | Positive |
| 4. | Inadequacy of trained staff to implement ICT | 2.78 | 0.99 | Positive |
| 5. | Inadequate funding | 3.01 | 0.83 | Positive |
| 6. | Lack o cooperation and resources sharing among libraries | 2.67 | 1.01 | Positive |
| 7. | High cost of maintenance of ICT equipment | 2.71 | 0.96 | Positive |
| 8. | Unsatisfactory ICT after sales maintenance and support agreement | 2.47 | 1.00 | Positive |
| 9. | Lack of ICT policy in the libraries | 2.41 | 1.00 | Negative |
| 10. | Inadequate ICT skilled professionals | 2.50 | 1.00 | Positive |
| 11. | Poor standardized hardware and software provisions | 2.52 | 0.98 | Positive |
| 12. | Lack of proper for ICT in the libraries | 2.49 | 0.99 | Negative |
| 13. | Poor policy to regulate standards in ICT facilities in libraries | 2.39 | 0.99 | Negative |

Data in table 6 revealed some of the factors affecting the provision of ICT-based services in public libraries. All but four of the 13 items were accepted as factors influencing the provision of ICT-based services. These are the items that have mean scores of 2.50 and above.

## 5.1 Discussion of Findings

The findings of the study on the users' utilization of the available ICT-based services revealed that the librarians scored high on the rating, indicating that users utilize the available ICT-based services. This finding was further buttressed by the z-test of analysis, which indicated that the mean rating scores of the librarians on the extent of users utilization of the available ICT-based services is significantly greater than the expected mean of 40.00. A look at the item statements of the rating scale shows that the users utilizes the available ICT-based services for various reasons ranging from solving assignment, personal entertainment, personal research, business information, interaction with friends, check e-mails, prepare seminar papers and for personal development. This finding is in line with the finding of Singh, Sharma and Negi (2009) that ICT services are highly utilized in the public libraries. This shows that if more and essential ICT-based services are provided in the public libraries, they will be highly utilized by the library users.

The findings of the study on users' satisfaction with the available ICT-based services revealed that users are not satisfied with the available ICT-based services provided in the public libraries. Even though the available ICT-based services are being utilized, however, they are below expectation and as a result users are not satisfied with them. This finding was further buttressed by the z-test of analysis and decision that the mean rating score of the librarians is significantly less than the expected mean of 22.50. The finding is contrary to the findings of Khan (2011) and Kumar and Singh (2011) that users are highly satisfied with the quality of ICT provided in the public libraries.

The result of findings on the factors affecting the provision of ICT-based services in the public libraries revealed that some of the problems affecting the provision of ICT-based services are lack of adequate funding, lack of cooperation and resources sharing among libraries, inability to provide strong connectivity, lack of affordable internet services, high cost of maintenance of ICT equipments, and inadequate skilled professionals. The librarians agree that these factors affect the provision of ICT-based services. This finding is in agreement with the findings of Faboyinde (2006) who found out that some of those factors mentioned above affect the provision of ICT-based services. Nwabueze and Ibeh (2013) found that in addition to the above mentioned factors, poor electricity supply, general inadequacy in the level of relevance infrastructures like telecommunication facilities affects the provision of ICT-based services the public libraries.

## 5.2 Summary of Findings

Some of the findings of the study are as follow:

1. Users utilize the available ICT services. The $z_{Cal}$ of 3.40 is greater than the $z_{Cal}$ of 1.645, therefore, the null hypothesis is rejected. Hence, the mean rating scores of the library staff on the extent of users' utilization of the available ICT services in the Libraries is significantly greater than the expected mean of 40.

2. The users are not satisfied with ICT services provided. The $z_{Cal}$ of 4.67 is greater than the of 1.645, therefore, the null hypothesis is rejected. Hence, the mean rating scores of the librarians on the level of users' satisfaction with ICT services provided is significantly greater than the expected mean of 22.50.

2. All but four of the 13 items were accepted as factors affecting the provision of ICT-based services. These are the items that have mean scores of 2.50 and above.

## 5.3 Recommendations

Based on the findings of the study, the following recommendations were made:

1. Result of the study shows that the available ICT-based library services are utilized by the users. This shows that use is not a problem. Effort should be made to sustain the level of usage while more services are provided.

2. Heads and Directors of public library systems should put measures in place to ensure that user s' level of satisfaction with ICT-based library services provided is increased.

3. There should be increased funding of public libraries to enable them provide ICT-based services since the library is the only library that provides services to all categories of users. Also subscription rates of internet services should be subsidized for public libraries and library staff trained in the rudiments of maintenance of these ICT equipment and implementation of ICT services.

## Conclusion

The finding of this study that the available ICT-based services are being utilized by users implies that if more of these services are provided in the public libraries they will be properly utilized. These services can be utilized for various purposes such as for personal researches, business information, surf the internet, prepare seminar papers and for other purpose. If users are sure that they will available these modern day ICT-based services they will make use of these libraries. However, because the ICT-based services are not adequately provided and users will not be satisfied with the services provided even though they use them. However, there are several factors influencing the provision of ICT services calls for serious concern to stakeholders. The existence of factors such as inadequate funding high cost of maintenance of ICT equipment, lack of affordable electric power supply, lack of cooperation and resource sharing among libraries, etc. will affect the effective provision of ICT services in public libraries.

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