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PROVISION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICTS) SERVICES AND USERS' SATISFACTION IN THREE GOVERNMENT OWNED UNIVERSITY LIBRARIES IN DELTA STATE, NIGERIA

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Abstract

The researchers examined the provision of Information Communication Technology (ICT) services and Users satisfaction in three Government owned university libraries in Delta State. Three(3) research questions were posed and 3 hypotheses were formulated. The researchers adopted correlational research design which involved simple and multiple linear methods. The population of this study is 2,155 including staff and registered Users of the various institutions. The sample size for the study is 215 both staff and registered library Users. Two instruments were used for data collection for the study. They are: Provision of ICT services scale (PICTSS) and Users satisfaction scale (USS). The reliability was ascertained using Cronbach alpha statistics which One 1 is a measure of internal consistency. The internal consistency coefficient indices obtained for PICTSS and USS were 0.74 and 0.85 respectively. Pearson Product Moment was used to answer research question 1-5, while one Way ANOVA F-test associated with multiple correlation was used to test hypotheses 6 at 0.005 level of significance. It was found that there is a high positive and significant relationship between provision of ICT services and the extent of Users' satisfaction with Web based OPAC in the libraries; there is a high positive and significant relationship between provision of ICT services and the extent of User; satisfaction with Digital library services in the libraries; there is a high and positive significance relationship between provision of Electronic Document Delivery(EDD) and the extent of users satisfaction. Based on the findings, the researchers recommended that management of libraries understudy should endeavour to provide needed ICT facilities that could enhance Users' satisfaction with Web based OPAC in the libraries. This can be done by seeking assistance from philanthropists and other private individuals.

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1.0 INTRODUCTION

Information Communication Technology (ICT) is a critical enabler for university libraries, facilitating efficient information provision essential for national development. ICT enhances the delivery of diverse library services, improving accessibility and user satisfaction (Formson, 2009). In Nigerian academic libraries, ICT has significantly transformed service quality, though its effectiveness depends on librarians' competence and willingness to adopt these technologies. A university library supports its institution by sustaining academic curricula and advancing research. Often described as the "heart" of a university, it provides essential resources for students, faculty, and researchers in both print and digital formats (Saleem & Batch, 2023). Obi (2021) likens it to a "think tank," while Nwosu (2000) defines it as an operational unit within universities. Staff and infrastructure enable these libraries to promote teaching and research, making them indispensable in higher education.

Modern university libraries rely on ICT to fulfill their core functions—teaching, learning, and research. Without ICT, these objectives remain unattainable. Libraries now provide electronic resources, aligning with institutional goals such as knowledge dissemination, research, and global collaboration (Chukwuma-Nwosu, 2008). Libraries are service oriented organizations established for the provision of relevant information resources and quality services to meet their users' information needs. Users are the reason for the existence of the university library. As a result, meeting the information need is the priority of every library and this requires the provision of the actual information resources and services that will satisfy these needs. Unfortunately, these needs seem not to be satisfied with the library services provided in the university libraries. Researchers like Zulu (2019) and Ufuoma (2021) conducted a study which focused on ascertaining users' satisfaction in university libraries and their findings have indicated low and, in some cases, very low library users' satisfaction. There is therefore need to provide more services to boost library Users' satisfaction. The question here is, will the provision of ICT services such as web-based (OPAC), Digital library services, Electronic Document Delivery, Institutional Repository, Current Awareness services among others, improve Users' satisfaction in the university libraries-The answer to this is the nub of this study.

2.0 OBJECTIVES OF STUDY

- i. Specifically the study will be guided with the following objectives:
- ii. Between provision of ICT services and extent of users' satisfaction with web based OPAC in the libraries;
- iii. Between provision of ICT services and extent of users' satisfaction with digital library services in the libraries;
- iv. Between provision of ICT services and extent of users' satisfaction with electronic document delivery in the libraries;

3.0 LITERATURE REVIEW

The dawn of information revolution is considered one of the marvels of the twenty-first century, transforming modern university libraries and creating numerous possibilities and opportunities. Modern libraries are now considered centers for creation and recreation of information products and services, serving as dynamic catalysts of research and development activities with strong roles in achieving academic excellence. Information and Communications Technology (ICT) deals with the use of electronic computers and computer software to select, convert, store, protect, process, transmit, and retrieve information (Ejike, Igwebuike, Amaoge & Agbo, 2017). According to Harry & Asiegbu (2019), ICT is defined as the convergence of microelectronics, computing and telecommunication which has become a global phenomenon spanning across education, governance, business, market, labor, productivity, culture, trade, and commerce.

Kude (2022) conceptualized ICT as the scientific, technological and engineering disciplines and management technologies used in handling information processing, application and related computers. Kumar (2020) described ICT as a generic name for communication hardware adopted in ensuring instantaneous dissemination of information and social values globally.

4.0 HISTORICAL DEVELOPMENT AND EVOLUTION

Islam and Islam (2019) stated that the use of ICT in academic libraries began in the 1960s. Krubu & Osawuru (2016) noted that despite ICT development and various efforts in Nigerian higher education libraries, progress mainly began in the early 1980s with microcomputer introduction, primarily confined to university and research library sectors. Tamizhechelvan (2014) identified ICT as comprising three interrelated components: computer technology for processing and storing information, telecommunication technology for information transmission, and reproduction technology for production of acquired information.

5.0 CURRENT APPLICATIONS AND BENEFITS

Siddike & Afolabi (2018) discovered in their study on Bangladesh university libraries that 60% of teaching staff use ICT for preparing lecture notes. The accelerated adoption of ICT has resulted in globalization of information and knowledge resources.

According to Olise (2021), ICT introduction in universities has brought computerization of traditional materials such as books, journals, newspapers, and other information resources, leading to virtual library existence. Educational researchers can access current literature with ease, and ICT encourages collaboration among researchers regardless of location.

Siddikike & Mairaj (2017) argued that ICT has transformed the world in all aspects of life, including university library services. Kari (2017) and Kuhthay (2010) agreed that rapid ICT development and networked information services have prompted comprehensive review of the library and information science profession. The benefits of ICT in university libraries include:

- Speedy and easy access to information
- Remote access capabilities
- Round-the-clock (24/7) access
- Access to unlimited information from different sources
- Enhanced information flexibility
- Facilitated reformatting and combining of data from various sources

6.0 CHALLENGES AND BARRIERS

Despite the advantages, several challenges affect ICT provision in academic libraries. According to Siddike, Munshi and Sayeed (2014), factors affecting ICT service provision include inadequate funds, lack of trained ICT personnel, and lack of user awareness of ICT potential.

Malweta & Ella (2021) revealed that ICT facility availability in studied libraries is inadequate in number. Faboyinde (2009) identified additional challenges including operational orientations, financial base problems, system problems, budgetary preferences, low human capacity building, and lack of political will. Saka and Akangbe (2013) identified insufficient available ICT resources as the highest reason inhibiting users' satisfaction with ICT use.

7.0 USER SATISFACTION FRAMEWORK

Satisfaction represents the act of fulfilling a need, desire, or appetite. According to Ikonne (2022), satisfying library users' information needs means the level to which users' information needs are met and the degree to which their satisfaction boosts continuous use of library resources and services.

As Adamu (2023) noted, library and information centers have continually used ICT in recent years to satisfy the diverse information needs of their users. Nwalo (2017) defined the library as an agency set up to procure, organize, preserve and make available to users all forms of information resources within the fastest possible time.

Kavitha (2017) observed that in every age, libraries have adopted the latest technology in rendering services to users. In the present age, ICT has become a revolutionary force improving library service delivery.

8.0 CONTEMPORARY CHALLENGES AND USER EXPECTATIONS

Tiemo and Atebo (2020) noted that libraries are key departments providing invaluable information resources and facilities in academic institutions. Currently, university libraries pay much attention to satisfying users' information needs with quality resources and improved services. Malhusudhan (2019) recommended that university libraries should introduce online and offline feedback systems to track effectiveness of their resources and services. The extent of users' satisfaction with academic library resources justifies their existence.

ICT revolution has created challenges for LIS professionals as library users have become more complex in learning and information needs, accessing digital content through internet and mobile devices. Libraries must be ready to satisfy changing knowledge and new learning behaviors of users.

9.0 MEASURING SATISFACTION AND PERFORMANCE

Adeiran (2015) asserted that the level to which library users' information needs are met reflects the degree of their satisfaction and continuous use of library resources and services. Understanding user satisfaction degrees helps in providing better services.

Zulu & Ufuoma (2019) stated that "users' level of satisfaction with library services has been used to evaluate the performances of various services within a library, and to measure a given library's overall level of performance and to compare this level of performance with those reported for other libraries." Egbuna (2017) observed that ICT explosion since the beginning of the 20th century has been rendering manual-based library systems less relevant. ICT provides library professionals new opportunities to improve their sources and services, becoming inevitable for academic librarianship growth and development. Ugwuanyi (2009) noted that ICT has revolutionized various aspects of library services from simple clerical work to acquisition, organization and dissemination of information. The convergence of computer technology and telecommunication has resulted in comprehensive Information and Communication Technology integration.

As Afolabi (n.d.) asserted, "woe betide the nation that fails to build and to indigenize its information infrastructure in order to exploit the immense benefits of the constantly changing hardware and software of ICT." The provision of resources and services significantly influences user satisfaction, with overall perception of a library's resources contributing to user satisfaction levels. Modern university libraries must continue adapting to technological changes while addressing implementation challenges to maintain their role as vital information hubs supporting institutional academic objectives.

10.0 RESEARCH METHODOLOGY

The study adopted the correlational research design, which involved simple and multiple linear methods. A correlational study determines whether or not two variables relate. This means to study whether an increase or decrease in one variable corresponds to an increase or decrease in the other variables. The goal of correlational research is to find out whether one or more variables can relate. The researcher adopted this design to enable her correlate provision of ICT services and users' satisfaction, according to Cheng (2016) a correlation research design could be used to describe the relationship between two or more variables as well as how strongly these variables relates to one another. Therefore, correlation research design was used to establish the extent of relationship that exists between ICT provision and users' satisfaction in three government owned universities in Delta State. Furthermore, the linear type of the correlation was used as there is the possibility of deriving a straight line from the scattered dots when plotted.

The population of this study is 2,155 including staff of various universities and registered Users. The population comprised 712 registered Users and staff (20) of Delta State University Abraka, 680 registered library users and (18) staff of Federal University of Petroleum Resources (FUPRE), 700 registered library users and (24) Staff of Federal University of Maritime Technology, Burutu.

Research Question 1: What is the coefficient of relationship between provision of Digital library services and extent of users' satisfaction in the libraries?

Table 1 shows the summaries of t-test of simple linear correlation used to ascertain the coefficient of relationship between provision of Web Based OPAC services and extent of users' satisfaction in the libraries. The result indicates the degree of freedom as 213 and the t-calculated value of 12.180 is greater than the t-tabulated value of 1.96. Given that the-calculated value is greater than the t-tabulated value, the researcher therefore rejected the null hypothesis; thus, deducing that the coefficient of relationship between provision of Web Based OPAC services and extent of users' satisfaction in the libraries is significant.

TABLE-1

SUMMARIES OF PEARSON R USED TO ANALYZE THE RELATIONSHIP BETWEEN PROVISION OF DIGITAL LIBRARY SERVICES (X) AND EXTENT OF USERS' SATISFACTION (Y) IN THE LIBRARIES

V	n	Σ	r	MR	DR	Remarks
X	215	15049	0.78	High	Positive	High
						Positive
Y	215	5207				Relationship

Size (n), Summation (Σ), Pearson r (r), Magnitude of Relationship (MR), Direction of Relationship (DR) and Remarks

Showed the summaries of Pearson r used to analyze the relationship between provision of digital library services and extent of users' satisfaction in the libraries. The result shows that an index of 0.78 was realized for the relationship between the two variables. This result indicates that there is a high positive relationship between provision of digital library services and extent of users' satisfaction in the libraries. This negative nature indicates that an increase in one variable is likely to lead to the same measure of increase in another variable and a decrease in one variable could also lead to the same measure of decrease in another variable, implying a strong association between the variables. Therefore, the answer to the research question is that there is a high positive relationship between provision of digital library services and extent of users' satisfaction in the libraries.

Hypothesis 2

Ho2: The coefficient of relationship between provision of digital services and extent of users' satisfaction in the libraries is not significant.

TABLE 2:

SUMMARIES OF T-TEST OF SIMPLE LINEAR CORRELATION USED TO ASCERTAIN THE COEFFICIENT OF RELATIONSHIP BETWEEN PROVISION OF DIGITAL LIBRARY SERVICES AND EXTENT OF USERS' SATISFACTION IN THE LIBRARIES.

V	n	Σ	r	A	df	tcal	ttab	Decision
X	215	15049	0.78	0.05	213	18.433	1.96	Reject Ho2
Y	215	5207						

Table 2 shows the summaries of t-test of simple linear correlation used to ascertain the coefficient of relationship between provision of digital library services and extent of users' satisfaction in the libraries. The result indicates the degree of freedom as 213 and the t-calculated value of 18.433 is greater than the t-tabulated value of 1.96. Given that the-calculated value is greater than the t-tabulated value, the researcher therefore rejected the null hypothesis; thus, deducing that the coefficient of relationship between provision of digital library services and extent of users' satisfaction in the libraries is significant.

RQ3: What is the coefficient of relationship between provision of electronic document Delivery services and extent of users' satisfaction the libraries?

TABLE 3:

SUMMARIES OF PEARSON R USED TO ANALYZE THE RELATIONSHIP BETWEEN PROVISION OF ELECTRONIC SERVICES (X) AND EXTENT OF USERS' SATISFACTION (Y) IN THE LIBRARIES

V	n	Σ	r	MR	DR	Remarks
X	215	15049				High
			0.77	High	Positive	Positive
Y	215	5222				Relationship

Size (n), Summation (Σ), Pearson r (r), Magnitude of Relationship (MR), Direction of Relationship (DR) and Remarks

Table showed the summaries of Pearson r used to analyze the relationship between provision of electronic document delivery services and extent of users' satisfaction in the libraries. The result shows that an index of 0.77 was realized for the relationship between the two variables. This result indicates that there is a high positive relationship between provision of Electronic document delivery services and extent of users' satisfaction in the libraries. This negative nature indicates that an increase in one variable is likely to lead to the same measure of increase in another variable and a decrease in one variable could also lead to the same measure of decrease in another variable, implying a strong association between the variables. Therefore, the answer to the research question is that there is a high positive relationship between provision of Electronic document delivery services and extent of users' satisfaction with electronic document in the libraries.

Hypothesis 3

Ho3:The coefficient of relationship between provision of Document Delivery services and extent of users' satisfaction in the libraries is not significant.

TABLE 6:

SUMMARIES OF T-TEST OF SIMPLE LINEAR CORRELATION USED TO ASCERTAIN THE COEFFICIENT OF RELATIONSHIP BETWEEN PROVISION OF ELECTRONIC DOCUMENT DELIVERY SERVICES AND EXTENT OF USERS' SATISFACTION IN THE LIBRARIES.

V	n	Σ	r	α	df	t _{cal}	t _{tab}	Decision
X	215	15049						
			0.77	0.05	213	17.627	1.96	Reject Ho ₃
Y	215	5222						

Sample Size (n), Summation (Σ), Coefficient of Relationship (r), Alpha Level (α), Degree of Freedom (df) and t-test of Significance of Simple Linear Correlation between two Variables

Table 6 shows the summaries of t-test of simple linear correlation used to ascertain the coefficient of relationship between provision of electronic document delivery services and extent of users' satisfaction in the libraries. The result indicates the degree of freedom as 213 and the t-calculated value of 17.627 is greater than the t-tabulated value of 1.96. Given that the-calculated value is greater than the t-tabulated value, the researcher therefore rejected the null hypothesis; thus, deducing that the coefficient of relationship between provision of electronic document delivery services and extent of users' satisfaction in the libraries is significant.

11.0 RECOMMENDATIONS

Even though there is seemingly decent satisfactory level with the provision of ICT based services from the studies, the following recommendations are still expedient;

- More effort should be made by the Management of the universities of Delta State University, Abiraka,

Federal University of Petroleum Resources Effurun and Federal University of Maritime Technology Burutu libraries to improve on the existing ICT services for use in the library, so as to further increase the level of satisfaction with these ICT services in the library.

- The Internet access in this university library should be further improved upon, so as to increase the level of satisfaction by the library users' access to other ICT services. This is because most ICT-based services rendered in the library are tied to the accessibility and functionality of the Internet.
- Management of university libraries should endeavour to provide needed ICT facilities that could enhance user satisfaction with web based OPAC in the libraries. This can be done by seeking assistance from philanthropist and other private individuals to that effect.

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