Information Professionals' ICT skills and library services delivery in selected University libraries in Nigeria

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Abstract
The study examines ICT skills for professional library services delivery in selected academic libraries in Nigeria. The population for the study was library staff of the selected federal universities in Nigeria. The universities are Nnamdi Azikiwe University, Awka, Anambra State, University of Nigeria, Nsukka, Enugu state, Federal University of Technology, Owerri, Imo State, Michael Okpara University of Agriculture, Umudike, Abia State, Alex Ekwueme Federal University, Ndufu-Alike, Ikwo Ebonyi State, University of Benin, Benin City, Edo State, University of Port Harcourt, Rivers State. A self-constructed, validated questionnaire was used to collect data that were analysed in line with the objectives". Analysis of the data for the study was done using mean rating and standard deviation. The study reveals that information science professionals in some Federal University libraries in Nigeria basically lack ICT management skills. The study further reveals that majority of the respondents agree to a very large extent that the profit derived from ICT skills are enormous. Further findings also reveal that ICT facilities for rendering library services is a welcome development.

Keywords: Information and Communication Technology (ICT), Academic Libraries, ICT skills, Library services

1.1 Introduction

The introduction of digital tools has significantly improved the administrative impact and efficiency of library services delivery. Information and communication technology (ICT), a significant tool for technical growth that has improved the world's ability to get results quickly, has improved and developed high-quality library services.

ICT doesn't have a single, widely acknowledged definition because the ideas and practices used in its tilization are evolving virtually every day. However, for the sake of this study, the author will propose a definition that is appropriate and will produce the desired outcomes. According to UNESCO (2008), cited by Ratheeswari (2018), information and communication technology (ICT) is a scientific, technological, and engineering discipline and management technique used in handling information, as well as its application and association with social, economic, and cultural issues. IGI Global (2021) also states that ICT is an umbrella term that encompasses all

technologies for the communication of information. This includes any medium for recording information (such as paper, pen, magnetic disk/tape, optical discs – CD/DVD, flash memory, etc.); technology for broadcasting information – radio, television; and any technology for communicating through voice, sound, or images – microphone, camera, loudspeaker, telephone to cellular phones. In light of this, it may be said that this technology has emerged to improve work output and service provision.

1.2 Statement of the Problem

ICT tools are constantly being introduced to the market, and skills in their use are crucial to achieving effective service delivery in the library profession. However the impact of these skills, along with its profitability, does not appear to have been felt in the provision of information services in federal university libraries in Nigeria. Professionals in information science may not have had the technical expertise necessary to manage these varied ICT facilities, and the benefits of their use may not have been obvious. Investigating professional ICT skills for library service delivery in a few Nigerian university libraries is essential given this framework.

1.2 Objectives of the Study

The objectives of the study are to:

i. Determine the basic ICT management skills required for library services delivery in federal universities in Nigeria.

ii. Determine the profitability of ICT skills for information science professional in library services delivery in federal universities in Nigeria.

1.3 Research Questions

RQ1. What are the extent of the basic ICT management skills required for library services delivery in federal universities in Nigeria?

RQ2. What are the extent of the profitability of ICT skills to information science professional in library services delivery in federal universities in Nigeria?

2.1 Review of Literature

ICT skills have been categorised by many schools of thought into operational, formal, strategic, basic, advance, specialised, etc. as means of application for both users and practitioners. ICT skills will be highlighted in this study under the following headings: database management skill, networking skill, cloud computing skill, skill for managing virtual reference services, skill for managing open access resources, skill for managing metadata, skill for managing web design, and standard skill for managing library software, such as MARC 21, Z39.50, Dublin Core, etc.

Database Management Skills*:* Techoppedia (2020) defines a database management system (DBMS) as a software package designed to define, manipulate, retrieve and manage data in a database. A DBMS generally manipulates the data itself, the data format, field names, record structure and file structure. Utilizing and applying all these database management features by the information professional makes service delivery in modern day librarianship very exceptional.

Networking skills: Pelgrum (2006) defined networking skills as the ability to appropriately use digital tools and facility to identify, access, manage, integrate, valuate, analyze and synthesize digital resources, construct new knowledge, create media expression and communicate with others in the context of specific life situations. However, According to Suzanne and Monica (2008), they defined networking as a key human capital skill that is unique in its ability

to increase an individual's social capital. However, networking in this context refers to a group of computers and other devices connected in some ways so as to be able to exchange data. Eze, Okorafor, and Obi (2013) listed familiarity with the etiquette of text messaging, electronic mail and chat rooms as part of the networking skills required by information professional in providing information service delivery. The skills as required by information professional involve the application of basic technological peripherals in the achievement of set objectives in any organization as the case may be for information services delivery.

Cloud computing skills: Foster, *et al*. (2018), defines cloud computing as services that offer diverse range of scalable and redundant service deployment models, which includes Infrastructure-As-A-Service (IaaS), Platform- As-A-Service (PaaS), Software-As-A-Service (SaaS), and Containers-As-A-Service (Caas). This technology involves synchronizing of data and information between all kinds of electronic devices, to co-work with contemporaries, to disseminate information in diverse ways etc. The National Institute for Standards and Technology (NIST) (2011), stated that cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. According to Yordanov, Yordanova, and Yordanova (2015), Working with remote services in Internet, Co-working with different types of documents, Data and files sharing, Screen sharing, Knowledge and skill for usage of digital repositories, acquiring of main terms and concepts of cloud computing are major ICT skills required.

Social media/virtual reference services skills: Virtual Reference Services according to ALA and RUSA, 2008 includes reference transactions and other activities that involve the creation, management, and assessment of information or research resources, tools, and services that patrons can use independently, in-house or remotely, to satisfy their information needs. Moran (2010), defined visual reference services as any service provided to users that can be accessed remotely, that it encompasses e-mail and chat reference, library websites, and web 2.0 technologies and they are the provision of Internet resources for end-users searching. This service type delivery in librarianship has rendered tremendous progressive impact on the clientele as provision is given for almost immediate feedback as the case may be.

Open access resource management skills: The technical skill of managing this technology enable the information professional to adjust to the information needs of today's society, and meet the needs of future patrons understanding the social situation and studying the historical experience of the current social development, and playing a role in inheriting national and human culture. Suber (2012) define open access as literatures that are digital, online, and free of charge, free of most copyright and licensing restrictions. Understanding the terms and conditions of this initiative by the information professionals makes it another unique platform of achieving great impact in the librarianship profession.

Metadata skills: This information communication technology skill enables the information professional to provide detail information about a document. In rendering this service, the information professional can retrieve any information irrespective of its location on the World Wide Web (www), this is because all the information about such document are provided to enable easy

retrieval. Dashrath, (2014) defines metadata as data about data, a surrogate, representation of the content, context, structure, quality, province, condition and other characteristics of document for the purpose of representing the document to a potential user for discovery, evaluation, fitness for use, access, transfer, and citation. Possessing this skill in librarianship makes the information provider a better information disseminator. It makes the librarian very broad in resources acquisition and disseminator, as the librarian have detail information about the content of any document at any point in time.

Web design skills: Almeiro & Omnterio, (2017) defined website design as a crucial point in a website development process, which involves the arrangement of content into graphical models that can be used as a basis for coding a site.

Profitability is the ability of an organization to earn gains, it can be said to be what is left of the revenue that an organization generates after it pays all expenses directly related to the generation of the revenue. According to Nguyen & Nguyen (2020), profitability is one of the vital elements for performance evaluation, showing the proportion of profit in comparison with asset investment, equity, or sales. In this study the profitability of ICT skills for information science professionals are the dividends that accrue to librarians as a result of their knowledge-ability in the use of Information and Communication Technology in library services delivery. Tamilselvan, Sivakumar and Sevukan (2012), stated that in the past few decades, information and communication technologies (ICT) have provided society with a vast array of new communication capabilities. For example, people can communicate in real-time with others in different countries using technologies such as instant messaging, voice over IP (VoIP), and video-conferencing.

3.1 Methodology

The research was a descriptive survey. All of the professionals and paraprofessionals in the study's libraries made up the study's population. That is the instrument that was given out to Nigeria's seven (7) Federal Universities. The universities are University of Nigeria, Nsukka, Enugu State, Federal University of Technology, Owerri, Imo State, Michael Okpara University of Agriculture, Umuahia, Abia State, Alex Ekwueme University, Ndufu-alike, Ebonyi State, University of Benin, Benin City, Edo State, and University of Port Harcourt, Rivers State. Nnamdi Azikiwe University is located in Awka, Anambra State.

To collect information from the 594 library staff members of the institutions under examination, a questionnaire was created. The questionnaire was distributed to these universities on various days, and retrieval was completed in 3 weeks. 16 items made up the research questionnaire, which were distributed to the 594 responders, however only 431 were actually retrieved. They were rated on a Likert-like scale with four categories: Very High Extent (VHE), High Extent (HE), Low Extent (LE), and No Extent (NE), which correspond to 4, 3, 2, and 1 points, respectively. A mean score below 2.5 was rejected, whereas the midpoint mean score of 2.5 of the respondents' scores was allowed. Specifically, arithmetic mean and standard deviation were used in the descriptive statistics analysis of the data collected.

4.1 Result and Discussion of Findings

Research Question1: What are the extent of the basic ICT management skills required for library services delivery in Federal universities in Nigeria.
Table 1: Mean extent of basic ICT management skills possess by information science professionals for library services delivery in Federal Universities in Nigeria.

Information Professionals' ICT skills and library services delivery in selected University libraries in Nigeria

S/N	ITEMS	UNIZIK (N=39)		AEU (N=38)		FUTO (N=15)		UNIBEN (N=130)		UNN (N=61)		UNIPORT (N=49)		MOUA (N=99)	
		X	SD	X	SD	X	SD	X	SD	X	SD	X	SD	X	SD
1.	Database management skills	2.26	0.68	2.28	0.86	2.20	0.86	2.25	0.92	2.46	0.89	2.00	0.96	2.16	0.92
		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R	
		Cluster Mean = 2.23													
2.	Networking / social media skills	2.23	0.66	2.32	0.84	2.27	0.88	2.18	0.87	2.39	0.89	1.97	0.94	2.11	0.92
		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R	
		Cluster Mean = 2.21													
3.	Cloud computing skills	2.13	0.80	2.32	0.84	2.20	0.94	2.14	0.88	2.34	0.91	1.98	0.99	2.17	0.94
		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R	
		Cluster Mean = 2.18													
4.	Social media/Virtual reference services skills	1.64	0.94	2.34	0.88	2.33	0.97	2.18	0.89	2.28	0.97	2.06	0.98	2.05	0.95
		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R	
		Cluster Mean = 2.13													
5.	Open access resource management skills	2.00	0.92	2.16	0.95	2.20	1.21	1.95	0.90	2.16	0.89	2.04	0.98	2.07	0.95
		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R	
		Cluster Mean = 2.08													
6.	Metadata skills	2.07	0.98	2.39	0.94	2.33	1.11	2.19	0.92	2.20	0.98	2.06	0.98	2.08	0.99
		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R		Dec = R	
		Cluster Mean = 2.19													
7.	Computer appreciation skills	2.21	1.10	2.68	0.89	2.53	1.13	2.49	0.87	2.39	1.05	2.22	1.00	2.15	1.04
		Dec = R		Dec = A		Dec = A		Dec = R		Dec = R		Dec = R		Dec = R	

Note: *X = Mean; SD = Standard Deviation; Dec = Decision; A= Accept; R= Reject; UNIZIK, Anambra State; UNN= Enugu State; FUTO = Imo State; UNIBEN = University of Benin, Edo State; MOUA = Abia, UNIPORT = University of Port Harcourt, Rivers State and AEU = Ebonyi State*

In response to the above research question, a list of items was presented to the respondents from the seven university libraries under investigation and they were requested to indicate their extent of acceptance or rejection.

The result from table 1, shows that all the items from 1-7 with scores of 2.49 below were rejected, which indicate the extent of ICT management skills possess by information science professional in Federal Universities in Nigeria. Open access resource management skills and social media/ virtual reference services skills were mostly affected with a cluster mean of 2.08 and 2.13 respectively. Followed in quick sequences are cloud

computing, metadata, networking, database and computer appreciation skills with cluster mean of 2.18, 2.19, 2.21, 2.23 and 2.38 respectively. This shows that a number of information science professional in the federal university libraries lack ICT management skills in information services delivery.

Research Question 2: What is the extent of the profitability of ICT skills to information science professional in library services delivery in federal universities in Nigeria?
Table 2: Mean extent of the profitability of ICT skills to information science professionals in library services delivery in federal universities in Nigeria.

S/N	ITEMS	UNIZIK (N=39)		AEU (N=38)		FUTO (N=15)		UNIBEN (N=130)		UNN (N=61)		UNIPORT (N=49)		MOUA (N=99)	
		X	SD	X	SD	X	SD	X	SD	X	SD	X	SD	X	SD
1.	Librarians are opportune to communicate on real time	3.46	0.60	3.21	0.81	3.06	1.10	3.22	0.76	3.34	0.79	3.31	0.89	3.59	0.77
		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A	
		Cluster Mean = 3.31													
2.	It provides speedy services delivery	3.59	0.59	3.24	0.79	3.27	0.88	3.36	0.79	3.51	0.80	3.39	0.88	3.70	0.57
		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A	
		Cluster Mean = 3.44													
3.	Provide ample opportunities to librarians with modern digital environment	3.44	0.94	3.29	0.80	3.13	0.92	3.38	0.69	3.39	0.89	3.41	0.87	3.68	0.60
		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A	
		Cluster Mean = 3.39													
4.	It provide quick access to information resource acquisition	3.18	1.02	3.18	0.83	3.13	0.99	3.42	0.73	3.31	0.91	3.29	0.74	3.54	0.75
		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A		Dec = A	
		Cluster Mean = 3.29													

In answering research question 2, a list of ICT profitability's were presented to information science professionals in the seven institutions under investigation and were requested to indicate their extent level of acceptance or rejection.

The result above shows that all the items from 1-4 with mean scores of 2.50 and above was accepted. The result indicate that speedy services delivery has the highest cluster mean of 3.44, followed by ample opportunities to librarians with modern digital environment with cluster mean of 3.39. Communication on real time was next with a cluster mean of 3.31 and finally quick access to information resource acquisition has a cluster mean of 2.29. With these responses on the high extent of acceptance level, it shows that professional ICTs skills in selected Federal University libraries in Nigeria, agrees that ICT profitability enhances library services delivery.

Conclusion and Recommendations

The purpose of this research has been achieved. The survey have been able to established that information science professionals in selected Federal university libraries in Nigeria lack the major ICT management skills highly required for effective job performances in service delivery in their various divisions and units of the libraries. The study further established that the benefits derived from possessing ICT skills includes the following among others; speedy service delivery, provision of ample opportunity for librarians to communicate on real time and also work and perform their duties on digital environment, provision of quick access to information resource acquisition. Inclusively, the study established that ICT facilities provides new method of job execution, boost library services delivery operation, used to produce, store, retrieve and process information services. This corroborate the views of Verma (2013), when

he stated that ICT are basically information handling tools that are used to produce, store, retrieve, deliver, process, organize, distribute, preserve, search, exchange and update of information.

Based on the findings from the study, the following recommendations were proffered:

- Knowing the relevance of the information science professionals as the key players in information services delivery agent, there is need to acquire ICT management skills through necessary awareness programmes.
- There is need for constant on-time training and retraining programmes to enable them to be abreast and function maximally in the application and skillful handling of the ICT facilities.

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