May 2021

Librarians' ICT Competencies and Utilization of Emerging Technologies in Academic Libraries in Rivers State, Nigeria

Anthonia Omehia
Ignatius Ajuru University of Education, aomehia@gmail.com

Emmanuel Okwu
Ignatius Ajuru University of Education Port Harcourt, emmanuel.okwu@iaue.edu.ng

Onyema Nsirim
Ignatius Ajuru University of Education Port Harcourt, nsirimonyema@gmail.com

Librarians' ICT Competencies and Utilization of Emerging Technologies in Academic Libraries in Rivers State, Nigeria

Emmanuel OKWU, PhD

Ignatius Ajuru University of Education, Port Harcourt

emmanuel.okwu@iaue.edu.ng

Onyema NSIRIM
Ignatius Ajuru University of Education, Port Harcourt
nsirimonyema@gmail.com

Abstract

The main purpose of this study was to determine the extent of the relationship between Librarians' ICT competencies and utilization of emerging technologies in academic libraries in Rivers State, Nigeria. The study was carried out using a correlational design. Three research questions, three objectives guided the study and three null hypotheses were formulated and tested at 0.05 level of significance. The population of the study was 55 librarians in four academic libraries in Rivers State. A census sampling technique was used for this study, where all the 55 librarians were used as respondents. A structured questionnaire titled: Librarians' ICT Competencies and Utilization of Emerging Technologies Questionnaire (LICTUETQ) was used for data collection with 4 point likert scales. The response options on the instrument were: Strongly agree (SD) (4), Agree (A) (3), Disagree (D) (2), strongly disagree (SD) (1). A trial testing technique was adopted to ensure reliability of the instrument. The instrument was administered on seven respondents in Ken Saro-Wiwa Polytechnic Library Bori. Cronbach Alpha was used to analyze the data which yielded coefficient of 0.96. Linear Regression analysis was used to answer and test the null hypotheses at the.05 level of significance with the help of Statistics Package for Social Science (SPSS) version 23. The findings of the study showed a significant relationship between basic computer competencies, between information retrieval competencies and web 2.0 competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State, Nigeria. It was recommended that training and re-training of librarians on the basic computer competencies, informational retrieval competencies, competencies and web 2.0 competencies.

Keywords: ICT competencies, emerging technologies, academic library, librarians.

Introduction

The developments of technologies demand that institutions involved in the provision of services adopt and implement them. Emerging technologies have been integrated into the library and information services for effective and efficient library services delivery. This integration however means nothing if librarians lack Information and Communication Technologies (ICTs) competencies to utilize them. Skills are essential for excellent job performance libraries as a matter of necessity should prepare librarians for emerging technologies to enable them handle different jobs as required by different ICT tasks. The level of ICT competencies required varies from one position to another depending on the tasks and duties involved (Oyedokun, Oyewumi, Akanbi & Laaro, 2018). For example, for a librarian to be able to perform word processing, navigate around toolbars, desktop publishing and use office suites, basic computer competency is required. Working in web2.0 environment, librarians should be competent in the use of various social media platforms such as Facebook, Twitter, LinkedIn, interest, yahoo and blogs. They also need to be able to retrieve information from various search engines such as Google and Altavista. Kumar (2017) identified the use of ICT tools to include: communication technology such as emails, voicemail, telephone, fax, video conferencing and internet; also remote control technology which provides a platform to work with a remotely located computer system to access all subscribed e-resources anytime anywhere as well as library security such as Closed-Circuit Television (CCTV), Radio Frequency Identification (RFID) and Quick Response (QR) Code Technology. Doyle (2019) identified online collaboration, email management competency, online research skills, desktop publishing, word processing skills social media management, data management and retrieval skills as competencies required by librarians. Ocholla (2003) in his own vein stressed the competencies of librarians required to perform effectively and efficiently in digital age including computer literacy, word processing, spreadsheet, database management, online search, text digitization, content management, document management, library automation, web design and development. These skills and more are required to competently utilize the emerging technologies in library and information services and only those who are digitally savvy can use technologies to work across network to achieve a goal (Slater, 2003). ICTs and possession of ICT skills are not only vital for services delivery, but also contribute immensely to the advancement of human society (Onuoha, Akidi & Chukwueke, 2019). Abdulrahman and Habila (2017) ascertained that application of ICT in library and information services is not new,

but the level of application and success is worrisome. Librarians require ICT skills to be effective in the application of ICT to services delivery which is why it is important to prepare new generation of librarians to effectively use the emerging technologies. The emerging technologies in library and information services such as cloud computing, crowdsourcing, metadata, cybrary, integrated library management systems, institutional repositories, etc are no doubt making academic library services easier.

Academic libraries are libraries attached to institutions of higher learning to enhance, support and promote teaching, learning, and research. Academic libraries include universities, colleges of education and polytechnics. Ferdinand (2011) expressed that due to their function of acquisition, organization, storage, retrieval and dissemination of information and in accordance with achieving the mission and vision of academic institution is the precursor behind the establishment of academic libraries. Academic library services as holistically identified by Idowu (as cited in Igwela & Nsirim, 2018) according to the international standards include web-liographic service, Selective Dissemination of Information (SDI), Current Awareness Services (CAS), reference services, document delivery service, borrowing, renewing and reserving, computerized interactive search, technical services, IT services, e-library services, serials services, exhibitions and displays, user education, referral service, reprographic service and counseling service. However, with the evolution of ICT, academic libraries as ascertained by Spante et al (as cited in Adebayo, Iwu-James, Olawoyin, & Fagbohun, 2019) are seeking for innovative ways to perform their functions such as the provision of leadership and training in instructional technology. Ajayi (as cited in Ojiegbe, 2010) established that with the emergence of ICT, library has transformed into a new information service unit, providing, On-line Public Access Catalogue (OPAC), electronic acquisition and serials control, electronic resources sharing and electronic circulation functions which are very beneficial to the use of emerging technologies in library and information services. The benefits of ICT to library and information services cannot be fully exploited if librarians lack the prerequisite knowledge of the use of ICT therefore, it becomes important for librarians to be competent in the use of ICT.

ICT competencies of librarians are those technological and or computer skills and knowledge required by librarians to be able to fully exploit information services in the wake of new technology. Oyedokun, Oyewumi, Akanbi & Laaro (2018) viewed ICT competencies of library staff to be those relevant skills and knowledge to be acquired by those working in the

library to be able to fully exploit information search, retrieval, and delivery using electronic format. It is the acquisition of knowledge, skills and abilities at a level of expertise sufficient to be able to perform appropriately and professionally a given task in a work place. Competence is synonymous with skills and therefore is used interchangeably in this study

Librarians in Rivers state are expected to be competent in the use of technologies to be able to competently acquire, evaluate, criticize process, preserve, disseminate, and communicate information in the cyberspace. They should be able to retrieve information stored in both computer systems and electronic format, they need computer operating skills, internet fundamental, information retrieval competency and web 2.0 competency. These competencies could be necessary in the utilisation of emerging technologies in library and information science. The study therefore sought to survey librarians' ICT competencies and utilisation of emerging technologies in academic libraries in Rivers State.

Statement of the Problem

The pervasiveness of digital technologies in daily life is fundamentally changing the way librarians access, use and manage knowledge. Librarians need to process complex information which requires that they think critically and systematically to take decisions in different forms of evidence. Librarians will also have to constantly update their knowledge and skills to be in tandem with rapid technical change at their workplaces. More importantly, in order to leverage the new opportunities that digital technologies are presenting in many areas, individuals have to develop the right set of skills to make a meaningful use of these technologies. Omekwu (2008) identified basic knowledge of computers and their capabilities; competency with search engines; internet facilities; e-mail; internet navigator tools, web browsers and web file formats; database software; internet development and management know-how. Krishnan (2011) included creativity and innovation skills, media literacy, ICT literacy as well as flexibility and adaptability skills. The skills aforementioned are necessary for the utilization of emerging technologies in library and information services. The challenge is how to harness these skills for effective library services delivery. However the use of ICT in library and information services is not recent, but librarians' competencies in its use is worrisome. It therefore becomes imperative to survey librarians' ICT competencies and utilization of emerging technologies in academic libraries in Rivers State.

Objectives of the Study

The main objective of the study was to determine the extent of the relationship between ICT competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State. The specific objectives are to:

1. Identify the extent of the relationship between basic computer competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State

2. Determine the extent of the relationship between information retrieval competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State

3. Investigate the extent of relationship between Web.2.0 competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State

Hypotheses

1. There is no significant relationship between basic computer competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State.

2. There is no significant relationship between information retrieval competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State

3. There is no significant relationship between web2.0 competencies of librarians and the utilization of emerging technologies in academic libraries in Rivers State

Literature Review

Theory of Technology Acceptance Model (TAM)

Acceptance and use of technology is the readiness of an individual, group, organization or institution to adopt, implement and use technology. Dillon and Morris (as cited in Adeoye & Olarenwaju, 2019) see it as a demonstrable willingness within a user group to use technology for what it is meant for. Inability to accept and use technology could leave an individual, organization or institution behind. The Theory of Technology Acceptance Model according to Scherer, Siddiq & Tondeur (2019) was developed by Davis in 1986 who argues that the acceptability of an information system depends on perceived usefulness and perceived ease of use. Perceived usefulness according to him is the degree to which a person believes that the use of a system will enhance his job performance. Perceived usefulness of a tool according to him is a factor which influences the most therefore, has to be considered the most. This was also supported in the Theory of Reasoned Action, which agrees that the use of an information system

is determined by the behavioural intention of which the behavioural intention is determined by the person's attitude towards the use of the system and by his perception of its use.

Technology Acceptance Model (TAM) has been applied to several studies relating to users' acceptance and use of various technologies in different contexts and in various disciplines including Library and Information Science. Ammarukleart (2017) applied the theories in his study on the factors affecting faculty acceptance and use of institutional repositories in Thailand and confirms that performance expectancy, social influence, and resistance to change were direct determinants of faculty members' intention to use institutional repositories. Tibenderanna and Ogao (2008) applied the model in his study of end-users' acceptance and use of e-library services in eight universities in Uganda. It was established that users behavior had a significant percentage on expected benefit hence was responsible for end-users' acceptance and use of e-library services. Scherer, Siddiq & Tondeur (2019) applauded TAM models for being a good choice in explaining teachers' adoption of digital technology in education. Academic institutions aim to promote teaching, learning and research.

There are various emerging technologies in library and information Science, these technologies require competencies and the level of competencies needed or acquired will be determined by the acceptance and or behaviour of the potential users. On the other hand non-acceptance could lead to the non-utilization or underutilization of innovation or of information system. This study therefore adopted the TAM Model to ascertain the knowledge of the acceptance and use of emerging technologies in library and information services.

Emerging Technologies in Library and Information Science

Emerging technologies are the technologies that although may have been in existence for some time but are yet to be largely realized and adopted in a particular discipline. It could also be defined as an innovation in technologies that enables one to access, collect, process, explore, evaluate, explain, document, archive, disseminate, share and or communicate contents. Rotolo, Hicks & Martin (2015) defined it based on five attributes radical novelty, relatively fast growth, coherence, prominent impact, and uncertainty and ambiguity. BusinessDictionary.com sees it from the concept of a new technology that is currently being developed. According to Independent University (2020) the term applies to technologies that are currently creating or will create lasting economic or social effects. Radiniecki (2013) in his study found that analysis of job advertisements reveals that libraries are hiring emerging technologies libraria ns. Example of emerging technologies according to Stahl (2011), Özdenizci *et al.* (2010), Siemens and Tittenberger (2009) (as cited in Halaweh, 2013) include cloud computing, near field communications, ambient intelligence, virtual reality, and social network websites as emerging

technologies. Yang and Lili (2016) included distance learning, metadata, web conferencing and mobile computing. In an online course organized on March 2020 by Atlantic International University (AIU) on the topic "Emerging Trends and Technologies in Library and Information Services (ETTLIS)", Hassa (2020) listed emerging technologies in library and information services including smart library, cloud computing, institutional repositories, RFID technologies, QR code, library automation, robotics and semantics

Empirical Review

Amua-Sekyi and Asare (2016) conducted a survey on the ICT literacy among lectures and found out the possession of Internet accessing skills, word processing skills, email sending skills, presentation skills, and database searching skills. According to them surfing the Internet for information would help educators to establish connections with global education while word processing skills and ability to communicate through emails would help educators in creating documents.

Ademodi and Adepoju (2019) studied the possession of computer skills and competencies in the use of computer with a population of thirty comprising academic librarians from which a sample of twenty-four was drawn. The data were analyzed using frequency count and simple percentages. They found that 87.5% of librarians were computer literate. They also found that the most commonly reported skill was to navigate and explore the internet

Ojiegbe (2010) investigated the ICT competencies of library staff in the University of Abuja, FCT and University of Jos, Plateau State. Simple random sampling was used and the instrument used for data collection was a questionnaire which were analyzed using percentages and mean scores. Findings revealed that most of the library staff in university libraries performed microsoft word based tasks like typing and printing of documents and could provide online searches using the internet but could not perform effective professional library related duties using ICT. It was stressed that Staff needed ICT competencies in the areas that can assist them handle professional related duties, like internet skills, mastery of library software and technical skills.

Onuoha, Akidi & Chukwueke (2019) examined the effects of ICT skills in knowledge sharing by Library and Information Science (LIS) educators in Michael Okpara University of Agriculture, Umudike. The study adopted the descriptive survey design and a complete census technique was adopted, data obtained were analyzed using frequency counts and mean scores. Result of the study revealed acquisition of some ICT skills such as web2.0 skills, information retrieval skills, among others.

Sarfo, Amankwah, Oti-Agyen, & Yidana (2016) carried out a study on ICT access and use and competency level among second-cycle school teachers in Ghana. It adopted the global citizenship survey instruments to collect the data which was analyzed using SPSS version, descriptive statistics and Chi square. The results revealed that majority of the respondents used mobile phones (89%) and e-mail for social communication (80). It was further discovered that most of the respondents possessed high competence level in ICT applications.

Obat (2019) carried out a study to find out whether the students at Maseno University considered their skills of information retrieval as adequate in using electronic information resources. Purposive sampling technique was used to sample the respondents. Electronic, semi-structured self-administered Questionnaire was used to collect data with a population of 1001, cutting across all the schools at the eCampus of Maseno University from which a sample size of 286 was used and analyzed using SPSS. The result showed students information retrieval skills in locating electronic databases from the library website as 92%, using Boolean operators (74%), selecting appropriate database (95%), Downloading the full-text of an article such as in PDF, HTML format (96%) and selecting relevant information for further use (96%)

The literature has shown the connection between skills and utilization of the emerging technologies in library and information services. Most of the literature reviewed centered on ICT skills of library staff but remarkably to the researcher's best of knowledge no study has been documented on Librarians' ICT competencies and utilization of emerging technologies in academic libraries in Rivers State. The study therefore, provides literature on librarians' ICT competencies and the utilization of emerging technologies in academic libraries particularly in Rivers State and also support existing literatures on ICT skills and competencies of librarians.

Research Method

Population of the Study

They include librarian 1, librarian 11, senior librarians, and principal librarians, lecturer 1, Lecturer II, senior lecturer, assistant lecturers and graduate assistants at the University of Port Harcourt, Rivers State University, Ignatius Ajuru University of Education and Captain Elechi Amadi Polytechnic all in Port Harcourt, Rivers State.

Table 1: Distribution of Population of the Study.

Library/Department	No. of Librarians
Donald Ekong Library, University of Port Harcourt and LIS department	20
Rivers State University Library, Port-Harcourt and LIS department	19
Dame Patience Jonathan Automated Library, Ignatius Ajuru University, Port-Harcourt and LIS department	9
Captain ElechiAmadi Polytechnic Library, Port-Harcourt and LIS department	7
Total	**55**

Sample and Sampling Techniques.

Census sampling technique was used for this study, where all 55 librarians were used as respondents while seven Librarians at Kensaro Wiwa Polytechnic Library Bori, Rivers State were used for reliability testing. Census sampling technique was adopted because the population is not large, it is easier to sample all the population and information collected in census sampling has a low margin of error.

Instrument for Data Collection

Questionnaire was used to collect data. 55 copies of questionnaire were administered to all the respondents in the four academic libraries in Rivers State. A structured questionnaire titled: Librarians' ICT Competencies and Utilization of Emerging Technologies Questionnaire (LICUETQ) was used with 4 point scales. The response options on the instrument were: Strongly agree (SD) (4), Agree (A) (3), Disagree (D) (2), strongly disagree (SD) (1).

Validity of the Instrument

The instrument was given to two experts in the Ignatius Ajuru University of Education, Port-Harcourt to ascertain face and content validity by ensuring that items in the questionnaire matched with the research questions by modifications of some items.

Reliability of the Study

A trial testing technique was adopted to ensure reliability of the instrument. The instrument was administered on seven respondents in Ken Saro-Wiwa Polytechnic Library Bori. Cronbach Alpha was used to analyse the data which yielded the Alpha coefficient of 0.96.

Method of Data Collection

The copies of the questionnaire were administered during school period when staff were readily available. The questionnaires were administered to the staff with the help of a staff in each of the institutions and were collated from time to time within a week. 55 copies of questionnaire were administered to the 55 librarians only 54 were retrieved and found valid for the study

Method of Data Analysis

The data was analyzed using the simple linear regression statistical tool for both research questions and hypotheses

Decision Rule

R and R^2 were used to answer the research questions. R – value indicates the strength of the relationship while R^2- value (coefficient of determination) shows the proportion of variation in the utilization of emerging technologies (dependent variable) that is attributed to ICT competencies (independent variable). The p-value was used to test the null hypotheses at 0.05 level of significance. When ($p \leq 0.05$) the null hypothesis is rejected , and upheld when   ($p > 0.05$)

Findings

Table 1: Regression Model Summary on basic computer competencies of Librarians and utilization of emerging technologies

Variables	R	R^2	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Basic computer and Utilisation of Emerging Technology	.882a	.778	.773	.55688	2.07

a. Predictors: (Constant), Basic computer competencies
b. Dependent Variable: Utilisation of Emerging Technology

The result in Table 1 indicates the extent basic computer competencies of librarians relate with the utilization of emerging technologies in academic libraries in Rivers State. The table further shows the R- value as .88 and R^2 as .773. This implies that there is a very strong linear relationship between computer competencies of Librarians and utilization of emerging technologies and 77.3% proportion of variation in the dependent variable (utilization of emerging technologies) can be attributed to the independent variable (basic computer competencies).

Table 2: Regression Model Summary on information retrieval competencies of Librarians and utilization of emerging technologies

Variables	R	R^2	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Information retrieval and utilisation of Emerging Technologies	.929 a	.863	.861	.24745	2.19

    a. Predictors: (Constant), Information retrieval competencies
    b. Dependent Variable: Utilisation of Emerging Technologies

The result in Table 2 reveals the extent information retrieval competencies of librarians relate with the utilization of emerging technologies in academic libraries in Rivers State. The table further shows the R- value as .93 and R^2 as .863. This implies that there is a very strong linear relationship between information retrieval competencies of Librarians and utilization of emerging technologies and 86.3% proportion of variation in the dependent variable (utilization of emerging technologies) can be attributed to the independent variable (information retrieval competencies).

Table 3: Regression Model Summary on web2.0 competencies of Librarians and utilization of emerging technologies

Variables	R	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
web2.0 competencies and utilization of emerging technologies	.979 a	.959	.958	.18503	2.074

a. Predictors: (Constant), Web 2.0 competencies
b. Dependent Variable: Utilisation of Emerging Technologies

The result in Table 3 reveals the extent web2.0 competencies of Librarians relate with the utilization of emerging technologies in academic libraries in Rivers State. The table further shows the R- value as .98 and R^2 as .959. This implies that there is a very strong linear relationship between web2.0 competencies of Librarians and utilization of emerging technologies and 95.9% proportion of variation in the dependent variable (utilization of emerging technologies) can be attributed to the independent variable (web2.0 competencies).

Hypotheses Testing

Null Hypothesis 1

There is no significant relationship between basic computer competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State.

Table 4: Result of Linear Regression on basic computer competencies of librarians and utilization of emerging technologies in academic libraries

Beta = .882, STD= 1.108

Source of Variance	Sum of Squares	df	Mean Square	F	p-value
Regression	57.491	1	57.491	185.383	.000[b]
Residual	16.436	53	.310		
Total	73.927	54			

a. Dependent Variable: Utilisation of Emerging Technologies
b. Predictors: (Constant), Basic computer competencies

The result in Table 4.6 reveals the relationship between basic computer competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State, with the F value =185,383, p-value .000, Beta= .882 and standard error as 1.108 with a degrees of freedom of 1 and 53. The Beta value indicates how strongly basic computer competencies affect the librarians utilization of emerging technologies in academic libraries in Rivers State while the standard error measures the accuracy with which a sample distribution represents a population. However, since the p-value is less than 0.05 (p < 0.05), the null hypothesis is rejected, It can therefore be concluded that there is no significant relationship between basic computer competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State.

Null Hypothesis 2

There is no significant relationship between database management competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State.

Table 5 Result of Linear Regression on database management competencies of librarians and utilization of emerging technologies in academic libraries

Beta = .940, STD= .046

Source of Variance	Sum of Squares	Df	Mean Square	F	p-value
Regression	49.239	1	49.239	401.121	.000[b]

	Residual	6.506	53	.123		
	Total	55.745	54			

a. Dependent Variable: Utilisation of Emerging Tech.
b. Predictors: (Constant), Database management competencies

The result in Table 5 reveals the relationship between Database management competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State, with the F value = 401.121, p-value .000, Beta= .940 and standard error as .046 with a degrees of freedom of 1 and 53. The Beta value indicates how strongly database management competencies affect the librarian's utilization of emerging technologies in academic libraries in Rivers State while the standard error measures the accuracy with which a sample distribution represents a population. However, since the p-value is less than 0.05 (p < 0.05), the null hypothesis is rejected, It can therefore be concluded that there is a significant relationship between Database management competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State

Null Hypothesis 3

There is no significant relationship between information retrieval competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State.

Table 6: Result of Linear Regression on information retrieval competencies of librarians and utilization of emerging technologies in academic libraries

Beta = .929, STD= .034

Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	20.464	1	20.464	334.192	.010ᵇ
Residual	3.245	53	.061		
Total	23.709	54			

a. Dependent Variable: Utilisation of Emerging Technologies
b. Predictors: (Constant), Information retrieval competencies

The result in Table 6 reveals the relationship between information retrieval competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State, with the F value = 334.192, p-value .010, Beta= .929 and standard error as .034 with a degrees of freedom of 1 and 53. The Beta value indicates how strongly information retrieval competencies

affect the Librarians utilization of emerging technologies in academic libraries in Rivers State while the standard error measures the accuracy with which a sample distribution represents a population. However, since the p-value is less than 0.05 (p < 0.05), the null hypothesis is rejected, It can therefore be concluded that there is a significant relationship between information retrieval competencies of librarians and utilization of emerging technologies in academic libraries in Rivers State.

Null Hypothesis 4

There is no significant relationship between web2.0 competencies of Librarians and the utilization of emerging technologies in academic libraries in Rivers State.

Table 7: Result of Linear Regression on web2.0 competencies of Librarians and utilization of emerging technologies in academic libraries

Beta = .979, STD= .027

Source of Variance	Sum of Squares	df	Mean Square	F	p-value
Regression	42.731	1	42.731	1248.058	.002[b]
Residual	1.815	53	.034		
Total	44.545	54			

a. Dependent Variable: Utilisation of Emerging Technologies
b. Predictors: (Constant), Web 2.0 competencies

The result reveals the relationship between web2.0 competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State, with the F value = 1248.058, p-value .002, Beta= .979 and standard error as .027 with a degrees of freedom of 1 and 53. The Beta value indicates how strongly web2.0 competencies affect the Librarians utilization of emerging technologies in academic libraries in Rivers State while the standard error measures the accuracy with which a sample distribution represents a population. However, since the p-value is less than 0.05 (p < 0.05), the null hypothesis is rejected, It can therefore be concluded that there is a significant relationship between web2.0 competencies of Librarians and utilization of emerging technologies in academic libraries in

Discussion of Findings

Basic Computer Competencies of Librarians and Utilization of Emerging Technologies

The finding of hypothesis one revealed that there is a significant relationship between basic computer competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State. This implies that Librarians can perform their work effectively if they are proficient in basic computer competencies. This is because basic computer competencies involves the basic skills of computing that is paramount in the effective performance of Librarians in academic libraries in Rivers State. These basic skills are word processing skills, browsing skills etc. The finding supported the finding of Itsekor and Ikechukwu, (2012) that evolving technologies are impacting on the career of Librarians and as a result, digital literacy and competencies become imperative. Librarians cannot contend with information exclusion which the lack of digital literacy portends in their present work environment. The finding also supported the finding of Ojiebge (2010) that many library staff in University libraries performed Microsoft Word based tasks like typing and printing of documents and can provide online searches using internet but cannot perform effective professional library related duties using ICT. He stressed that Staff need ICT competencies in the areas that can assist them handle professional related duties, like internet skills, mastery of library software and technical skills.

Information Retrieval Competent of Librarians and Utilization of Emerging Technologies

The finding of hypothesis two revealed that there is a significant relationship between information retrieval competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State. This implies that Librarians can perform their work effectively if they are proficient in information retrieval competencies. This is because information retrieval competency is one of the essential competencies that should be possessed by Librarians in academic libraries in Rivers State. The finding is in agreement with the finding of Obat (2019) that the provision and use of the electronic information resources (EIR) have increased over time the optimal use of EIR which is greatly dependent on the information retrieval skills.

Web2.0 Competencies of Librarians and Utilization of Emerging Technologies

The finding of hypothesis three revealed that there is a significant relationship between web2.0 competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State. This implies that the use of web2.0 by Librarians can enhance their utilization of emerging technologies in academic libraries in Rivers State and make their work more effective. The finding supported the finding of Ojiegbe (2010) who revealed that many

library staff in university libraries can provide online searches using internet but cannot perform effective professional library related duties using ICT. He stressed that staff need ICT competencies in the areas that can assist them handle professional related duties, like internet skills, mastery of library software and technical skills.

Conclusion

Based on the findings of this study, it is clear that ICT competent is very paramount for Librarians utilization of emerging technologies in academic libraries in Rivers State. it could be concluded that Librarians competency on Information and Communication Technologies (ICTs) go a long way in ensuring the effective use of ICTs in the management of information resources in the library. This also translated to an improved storage and retrieval, processing, acquisition, dissemination, selection and ordering of information resources. However, the study revealed that the use of ICTs by Librarians for library and information products and services are minimal and that there is a significant relationship between ICT competencies of Librarians and utilization of emerging technologies in academic libraries in Rivers State. This implies that if the Librarians are proficient in the ICT competencies they will perform their work effectively.

Recommendations

Based on the findings of the study, the following recommendations are therefore postulated:

1. Librarians should be trained and retrained on the basic computer competencies like the use of various Microsoft office suit such as the word processing, navigating through various tool bars, desktop publishing, etc.

2. Librarians should also be trained on the various information retrieval channels such as Google, Alta-Vista, etc., and also on how to identify reliable and relevant information and database as well as retrieve information from invincible web

3. Librarians should imbibe the habit of using web2.0 in library and information services. They should be trained on the use of various social media platforms such as Facebook, twitter, Instagram and Pinterest

References

Abdulrahman, B. & Habila, L. (2017). Library and information science education and the challenges of ICT in a depressed society. *Research Journal of Library and Information Science. 1*(1), 25-30.

Adebayo, O., Iwu-James, J., Olawoyin, O.R. & Fagbohun, M. (2019, October 12-16*).* *Blended learning in higher education: Implication and strategies for academic library support*. Google Scholar. https://scholar.google.com/citations?user=vkQDcLQAAAAJ&hl

Ademodi, D.T., & Adepoju, E. O. (2019). *Computer skills among librarians in academic libraries in Ondo and Ekiti States, Nigeria* (LPP274). Library Philosophy and Practice. https://digitalcommons.unl.edu/libphilprac/274.

Adeoye, A. & Olanrewaju, A. O. (2019). *Use of technology acceptance model to evaluate library electronic information resources use by undergraduate students of Lead City University, Ibadan, Nigeria* (LPP2471). Library Philosophy and Practice. https://digitalcommons.unl.edu/libphilprac/2471.

Ammarukleart, S. (2017). *Factors affecting faculty acceptance and use of institutional repositories* [Doctoral dissertation, University of North Texas]. https://digital.library.unt.edu/ark:/67531/metadc984189/m2/1/high_res_d/AMMARUKLE ART-DISSERTATION-2017.pdf

Amua-Sekyi, E.T., & Asare, P.Y. (2016). A survey of information communication technology: An international experience based on Bellanet's work in the South. *Knowledge Management for Development Journal 3*(1), 68-78.

Doyle, A. (2019). Information and communications technology (ICT) skills of librarians. *Electronic Library*, *33*(3), 502 – 523.

Ferdinand, U. C. (2011). Influence of ICT literacy skills on its application for library use among academic librarians in South-East Nigeria [Unpublished master's thesis]. University of Nigeria.

Halaweh, M. (2013). Emerging technology: What is it? *Journal of Technology Management & Innovation*, *8*(3), 108-115.

Hassa, N. (2020). *Emerging technologies in library and information science.* Librarianshipstudies.https://www.librarianshipstudies.com/2019/08/emerging-trends-technologies-in-library.html

Igwela, J.N.B. & Nsirim, O. (2018). Mobile social media as a facilitator of library services

delivery in Nigeria: A case study of Rivers State. *International Journal of Information Processing and Communication*. *6*(2), 346-355.

Independent University. (2020). *What is emerging technologies*. Independentedu. https://www.independence.edu/blog/what-is-emerging-technology

Itsekor,V.O. & Ikechukwu, S.U. (2014). ICT competencies in the 21st century library *Journal of Business and Social Research*, *2*(4), 23-31.

Krishnan, Y. (2011, September 15). *Twenty first century skills*. Informedia. http://www.informedlibrarian.com/index.cfm

Kumar, N. B. (2017). *Use of information communication technology (ICT) and library operation: An overview*. http://eprints.rclis.org/32231/

Nworgu, L.N. (2008). Strategy for enhancing the effectiveness of sociology teaching and learning in the new information age. *Journal of Faculty of Education, 3(4), 3-4.*

Obat, R. (2019). Self-Assessment of information retrieval skills in using electronic information resources: A case study of Maseno University students. *https://www.up.ac.za/media/shared/117/ZP_Files/Capstone%20conference/N%20Authors/obat_r.zp178120.pdf*

Ocholla D. N. (2003). An overview of information and communication technologies (ICT) in the LIS schools of Eastern and Southern Africa. *Education Information*, *21*(2/3), 181-194.

Ojiegbe, N. (2010). ICT Competencies of library staff at the university of Abuja FCT and University of Jos, Plateau State [Unpublished master's dissertation]. University of Nigeria, Nsukka

Omekwu, C.O. & Echezona, R.I. (2008, June 15-19). Emerging challenges and opportunities for Nigerian libraries in a global information system [Paper presentation]. Nigerian Library Association 46th Annual National Conference and AGM, Kaduna. Kaduna State, Nigeria

Onuoha, J., Akidi, A. & Chukwueke, A. (2019, July 9-13). Effects of ICT skills in knowledge sharing: A focus on library and information science educators in Michael Okpara university of agriculture, Umudike [Paper presentation]. National Association of Library and Information Science Educators 21st National Conference/AGM, Ignatius Ajuru University of Education, Port Harcourt, Rivers State, Nigeria.

Oyedokun, T.T. Oyewumi, F. A, Akanbi, M. L., & Laaro, D. M. (2018). Assessment of ICT

perceived ease of use to end user satisfaction with enterprise resource planning systems. *Computers in Human Behaviour 20*(4), 505–515.

Özdenizci, B., M. Aydin, V., & Coşkun, K. O.k .(2010, December 15). *Research framework: A literature review and future research directions*. Research Gate. https://www.researchgate.net/publication/228853536_NFC_Research_Framework_A_Literature_Review_And_Future_Research_Directions

Radiniecki, T. (2013). Study on emerging technologies librarians: How a new library position and its competencies are evolving to meet the technology and information needs of libraries and their patrons. https://www.researchgate.net/publication/283423236

Rotolo, D, Hicks, D., & Martin, B. (2015). What is an emerging technology. *Research Policy*, *44*(10), 1827-1843

Sarfo, F.K., Amankwah, S.K., Oti-Agyen, P., & Yidana, I. (2016) . Information and communication technology access and use and competency level among second-cycle school teachers in Ghana*. Electronic Library*, *8*(5), 43-51.

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model: A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education*, *128*(1), 13–35. https://doi.org/10.1016/J.COMPEDU.2018.09.009

Slater, A. A. (2003). *Wanted new creations: Dinosaurs need not apply expectation of source integrated library system in academic libraries in Nigeria* (LPP1250). Library Philosophy and Practice. http://digitalcommons.unl.edu/libphilprac/1250

Tibenderana, P. & Ogao, P. (2008). Acceptance and use of electronic library services in Ugandan universities. https://www.researchgate.net/publication/220924114_Acceptance_and_use_of_electronic_library_services_in_ugandan_universities

Yang, S., & Lili, L. (2016). *Emerging technologies for Librarians: A Practical Approach*. Elsevier. https://www.sciencedirect.com/book/9781843347880/emerging-technologies-