

Full Length Research

Influence of Information and Communication Technology Facilities and Staff Attitude on Adoption and Use of Web 2.0 Technologies in Universities Library Services in South-South Nigeria

Ogechi NDULAKA, PhD

University Library, Kingsley Ozumba Mbadiwe University, Ogboko

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This study investigated the influence of information and communication technology facilities and staff attitude on adoption and use of web 2.0 technologies in universities library services in south-south Nigeria. It adopted the correlational survey research design using census method as sampling techniques to ensuring that every staff in the university libraries in south-south, Nigeria was captured. Self-constructed and validated questionnaire were used to collect data for this study. The findings show that availability of ICT facilities have significant influence on adoption and use of web 2.0 technology in library services delivery and that staff attitude has significant influence on adoption and use of web 2.0 technology in library services delivery in the universities in South-south, Nigeria. This study recommended that librarians should encourage themselves with Fred Davis 1986 theory of Technology Acceptance model by canvassing the usefulness of computers in enhancing their job performance with ease rather than fear of losing their jobs. It is also recommended that for smooth operation of web 2.0 technologies in the university libraries in the South-South zone of Nigeria Solar energy system as alternative sources of power should be embraced as we have the sun in abundance all-round the year.

Key Words: ICT, ICT Facilities, Staff Attitude, Use, Web 2.0 Technologies, Universities Library Services

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INTRODUCTION

Information and Communication Technology, which is the electronic means of capturing, processing, storing and disseminating information, is an umbrella term that includes any communication device or application, encompassing; radio, television, cellular phones, computers and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video-conferencing and distance learning (Rouse, 2012). Information and Communication Technology has become a force in library and information services delivering. Sutton (2001) observes that library and information science professionals have harnessed ICT to perform tasks better, through the automation of housekeeping tasks such as reference work, bibliographic services, cataloguing, serials,

circulation and acquisitions, all of which are performed more efficiently with ICT.

Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Blogs, Wikis and web services are all seen as components of web 2.0. Web 2.0 was previously used as a synonym for semantic web, but while the two are similar, they do not share precisely the same meaning. Web 2.0 is focused on the ability for people to collaborate and share information online via social media, blogging and web-based communications. Web 2.0 signaled a change in which the World Wide Web became an interactive experience between users and web publishers rather than the one-way conversation that had previously existed. It also represents a more populist version of the web, where new tools made it possible for nearly anyone to contribute regardless of their technological knowledge. Web 2.0 is pronounced web-two-point-oh. Staff use web 2.0 to do and share a number of experiences. For instance, through web 2.0 an organization like a university library may use social media user-generated content, photographs from FLICKS, Google maps and content from around the web to create a more complete user experience (in this case, service delivery in university libraries (Rathi and Given, 2010; Relvuan, 2011). From the above, it is not out of place to state that web 2.0 is increasingly creating, collaborating, disseminating, sharing of knowledge and creating networks among user groups.

Adoption and use of web 2.0 technologies in university library services may vary from one university library to another depending on a number of factors, such as institution culture. Relvuan (2011) states that web 2.0 is the term given to describe a second generation of World Wide Web that is focused on the ability for people to collaborate and share information online. Blogs, Wikis and all others mentioned above are seen as component of Web 2.0 technology. Web 2.0 is focused on the ability for people to collaborate and share information online via social media, blogging and web-based communication. Web 2.0 signaled a change in which the World Wide Web became an interactive experience between users and web publishers rather than the one-way conversation that had previously existed. It also represents a more populist version of the web, where new tools made it possible for nearly anyone to contribute regardless of their technological knowledge. Web 2.0 is pronounced web-two-point-oh. According to Ribiere, Huddad and Wiefe (2010), web 2.0 is a new phase in internet evolution which represents a paradigm shift on how individuals communicate and collaborate with each other and the creation of their own user experiences. A term that describes the changing trends in the use of World Wide Web technology and web design that aim to enhance creativity, secure information sharing, increase collaboration, and improve the functionality of the web as we know it (web 1.0). Stern (2021) posits that web 2.0 is difficult to define because it is not really a thing, but an approach, or shift, in how we use the web we already have. He believes it is a change to a more active user who actually creates content rather than just passively receiving and viewing it. Examples of most popular web 2.0 tools include social networking sites and social media sites (e.g. Face book, MySpace) video sharing sites (i.e YouTube), weblog, wikis, RSS (Really Simple Syndication) Instant Messaging, Podcasting,). Rathi and Given(2010) and Relvuan, (2011) explain that web 2.0 has social media as a major component. People use web 2.0 to do and share a number of experiences. Web 2.0 is one of the latest technologies that has made access and use of information among groups of people possible. It provides quick access to information in any part of the world.

Availability of ICT facilities and right attitude of staff could also be part of the institution culture that may lead to the adoption of web 2.0 technology in university libraries. With ICT facilities like computers, regular power supply, good accommodation and reasonable bandwidth, use of web 2.0 could be a possibility. But where a library lacks such, it could be difficult to adopt such high technology-driven asset. Again, if the institution is such that produces sound and compatible staff attitude to ICT resources, then use of web 2.0 could be a possibility but if other wise, its adoption and use could be undermined. This may be the reason Agibili and Agibowo (2018), Onyeneke, Solomon and Uwakwe (2018) argue that whether ICT resources in any university library are adopted in delivery of services, staff attitude is critical to its success or failure. It can be seen from the foregoing that it is not the adoption of web 2.0 in service delivery in any university library that is the crux of the matter, but interplay of institution and other factors that are germane to its adoption. The strength of the research therefore, lies in establishing relationship between, 'Institution Culture' and 'adoption and use' of web 2.0 technologies in service delivery.

Nworie, Unegbu and Opara (2022) describes a librarian as a person responsible for the management of a library and its contents, including the selection, processing and organization of materials and the delivery of information, instruction and loan services to meet the needs of its users. According to Nworie, Unegbu and Opara (2022)), library staff are those that are trained to carry out core duties of a library beyond the day-to-day routines of library officers and library attendants. Cataloguing, classification indexing, collection development, serials management and readers' services are some of the duties that library staff do. According to Nworie, Unegbu and Opara (2022), personnel in the libraries are saddled with the responsibility of developing and managing collections of books and journals (both print and electronic), as well as websites, databases, e-contents and other types of information carriers. According to Unegbu, Ogugua, Nnadimele and Nse (2019), with the computer, more options are open to library personnel to make library services more realistic and productive. According to LRCN (2013), being a librarian encompasses a

wide range of areas; technical skills, interpersonal skills, subject area knowledge, ICT skills, current awareness services or selective dissemination of information skills, and conservation and preservation skills.

A university library is a library established, maintained and administered by a university to meet the information needs of its students and staff in order to carry out their administrative and academic responsibilities. The university library occupies central and primary place because it serves all the functions of the academic community such as teaching, learning, research and community services (Unegbu and Ndulaka, 2024). University libraries play an indispensable role in the fulfillment of the functions of an academic community. In the light of the foregoing, this study therefore, seeks to investigate influence of ICT facilities and staff attitude on adoption and use of web 2.0 technologies in universities library services in South-South, Nigeria.

Research Questions

- i. What is the influence of ICT facilities on the adoption and use of web 2.0 technologies in services delivery?
- ii. What is the influence of staff attitude on the adoption and use of web 2.0 technologies in library service delivery?

Literature Review

Aina, Okunnuand Dapo-Asaju (2014) postulate that ICT is a phrase used to characterize the ability to access data by using the internet services dependent on telecommunication. ICT allows the opportunity within a limited time, to generate, coordinate, manipulate and view information from distant location around the world. They authors further stressed that ICT is a major advancement for libraries and offer tools to handle the explosion of information that contemporary society produces. It is from this hindsight historical perspective that one could infer that the most common conventional library services provided by librarians were reference and circulation services. But today, as observed by Hussain, Haruna and Muhammad (2021) libraries have grown to the level that exceed the four walls of the library to the extent that information services can reach the library users wherever they are in the world as a result of ICT application to library services delivery. Libraries in developing countries like Nigeria since the beginning of 21st century have started making efforts to metamorphose from being institutions driven by manual processes into modern ones where operations are in part or wholly dependent on information and communication Technology application to library services delivery. According to Unegbu, Amaechi, Njoku&Opara (2015), information Technology (IT) and Information and Communication Technology (ICT)) are the most recent and modern technological tools and resources used to communicate, create, organize, gather, retrieval, disseminate, store and manage information. According to Unegbu (2015), the emergence of ICT has brought about a tremendous technological revolution in the world. This revolutionary impact has affected all aspects of human endeavours, including library services. According to Ejike and Amaoge (2017), the application of ICT has enhanced accessibility to information from all over the world. Through the internet a wide range of information materials are made available in different journals thereby increasing accessibility to information. This correspond with the assertion of Rsamzan and Sigh (2009) that ICT allows easy integration of various library activities, increase efficiency in acquisition, access to data, cataloguing, classification, information retrieval and dissemination. It eliminates uninteresting and repetitive work; helps avoid duplication of efforts, increase the range of services, provides marketing opportunity facilitate cooperation and the formation of network and resource sharing in libraries.

In librarianship, time is of the essence in most interactions; especially when attending to staff and student's request, getting tasks accomplished is of great importance. ICT in that regard is a panacea to time wasted on repetitive task while library staff can amass more energy to attend to users and perform other pressing professional duties. In library set up, Information and Communication Technology (ICT) application is the one where computer systems are used to manage one or several library routines such as acquisition, serials control, cataloguing and classification and online public access catalogue (OPAC) (Ebunuwele, Ola and Uduebor, 2014). In a similar assessment of ICT application to library service delivery; Onwwih (2017), posits that ICT has made possible for libraries to access a wealth of up-to- date resources worldwide, providing quicker access to specialist in a number of disciplines and allow librarians to reach each other and users with messages and documents through the internet. Internet as a veritable tool for global online services. It is a mechanism for information dissemination and a medium for collaborative and interaction between individuals and their computers as it provides a golden opportunity for the provision of value-added services to by libraries. Availability of ICT facilities is yet another factor that may influence the adoption and use of web 2.0 technology

especially in a designated type of library; is the type of library (its specialty and peculiarity of its clientele). Specialization refers to an area of stress of a library. If a library, in this case, university specializes in a particular area of knowledge or a library serving special group of people, it may affect its use and adoption of web 2.0; for instance, if a university is a special one like university of science and technology, it means that the users are unique in terms of their science inclination, their services may require the use of ICT facilities to deliver services to them. But if otherwise, it may also affect it. Staff attitude which ultimately results in work attitude are collection of feelings, beliefs and thoughts about how to behave that people currently holds about their jobs and organizations (Bryson and White,2006).More specific than values, work attitude are not as long lasting as values because the way people experience their jobs and organizations often changes over time (William and Alliger, 1994) such changes are due in part to changes in work situations such as being given or denied promotion. Such work changes often result in attitude change, work values in contrast can and often do remain constant from job to job and organization to organization. Staff attitude to the acceptance and use of web 2.0 related facilities is germane, this may be the reason Agibili and Agibowo (2018), Onyeneke, Solomon and Uwakwe (2018) argue that whether ICT resources in any university library are adopted in delivery services, staff attitude is critical to its success or failure. In a related study.Geraldin and Vishhuu (2022) look at school culture as a significant factor that influences the attitude of teachers towards the use of ICT in teaching and learning. The level of efficiency in teaching and learning is based on the teachers' attitude which is influenced by school culture.

METHODOLOGY

This study adopted Correlational Survey Research method. The survey method was preferred because the study involves a population that is diverse in nature. According to Uhegbu (2009), when a study involves a large population or sample that is heterogeneous in location, occupation, gender and even in social status which would involve the collection of standardized information from the respondents based on the same criteria and conditions by using the same type of instrument to collect data from them, survey design is the most appropriate method to use. The questionnaire is titled "influence of ICT facilities and staff attitude on adoption and use of web 2.0 technologies (IIFSAUWTQ)". Moreover, survey research design reduces the influence of the researcher on the research outcome. The total population of the study is Six hundred and forty-nine (649) drawn from the six (6) university libraries studied in South-South, Nigeria. Out of these, six hundred and twenty-four (624) copies of the questionnaire were duly completed and returned for analysis giving a response rate of (96.1%). Twenty-five (25) copies of the questionnaire were non-response giving a non-response rate of (3.9%). The return rate of 624 (96.1%) is adequate representation of the entire population. No sample size was drawn from the population. This is because the population of the study is accessible. The census method was used to ensuring that opinions of all library staff in the south-south, Nigeria were captured for the study.

Analysis

Research Question 1

What influence does ICT facilities have on the adoption and use of web 2.0 technology in service delivery?

Table 1. Mean Values on Influence of ICT Facilities on Adoption and Use of Web 2.0 Technology in Library Services Delivery

	Influence of ICT Facilities on Adoption and Use of Web 2.0 Technology in Library Services Delivery	SA	A	D	SD	Total	Mean X	Decision
a	Computers in the library are programmed to web 2.0	309	281	26	8	624	3.43	Significant
b	Computers in the library are not compatible with web 2.0	9	7	319	295	624	1.59	Not Significant
c	Other ICT facilities for web 2.0 are available	315	285	13	11	624	3.45	Significant
d	Other facilities for web 2.0 not available	306	291	15	12	624	3.43	Significant
e	Network for web 2.0 is poor in the library	294	288	24	11	624	3.34	Significant
	Significant Mean Value= 3.05							

Analysis as shown on Table 1 indicates that the mean responses on influence of availability of ICT facilities on the adoption and use of web 2.0 technology in service delivery in the universities in South-south, Nigeria is greater than the significant mean value ($X=3.05$) in four main aspects. These are; computers in the library are programmed to web 2.0 ($X=3.43$), other ICT facilities for web 2.0 are available ($X=3.45$), other facilities for web 2.0 not available ($X=3.43$) and network for web 2.0 is poor in the library ($X=3.34$). The other reason namely, Computers in the library are not compatible with web 2.0 ($X=1.59$) has less than the significant mean value ($X=3.05$). Then, the significant mean value ($X=3.05$) shows availability of ICT facilities have significant influence on adoption and use of web 2.0 technology in library services delivery in the universities in South-south, Nigeria.

Research Question 2

What influence does the staff attitude has on the adoption and use of web 2.0 technology in service delivery?

Table 2. Mean Values on Influence of Attitude of Staff on Adoption and Use of Web 2.0 Technology in Library Services Delivery

	Influence of Attitude of Staff on Adoption and Use of Web 2.0 Technology in Library Services Delivery.	SA	A	D	SD	Total	Mean X	Decision
a	Many staff are not comfortable with web 2.0 technologies	26	23	281	294	624	1.65	Not Significant
b	Many staff shows a lot of interest on web 2.0 technologies	306	282	25	11	624	3.42	Significant
c	Staff apathy to web 2.0 technology is high	305	283	24	12	624	3.42	Significant
d	Staff response to web 2.0 training is high	311	293	16	4	624	3.50	Significant
e	Many staff are ICT literate on web 2.0 technology	279	285	37	23	624	3.31	Significant
	Significant Mean Value= 3.06							

Based on the analysis as shown on Table 2, many staff shows a lot of interest on web 2.0 technologies ($X=3.42$), many staff shows a lot of interest on web 2.0 technologies ($X=3.42$), staff response to web 2.0 training is high ($X=3.50$) and many staff are ICT literate on web 2.0 technology ($X=3.31$). It can be inferred that the items mentioned above have significant mean value ($X=3.06$) with the exception of Many staff are not comfortable with web 2.0 technologies ($X=1.65$). Generally, staff attitude has significant influence on adoption and use of web 2.0 technology in library services delivery in the universities in South-south, Nigeria.

FINDINGS

Result on Table 1, research question 1 revealed that the influence of ICT facilities on adoption and use of web 2.0 technologies in services delivery was significant. This influence may have arisen because with ICT facilities, adoption and use of web 2.0 technologies in services delivery could be effective. Computers that are available in the library are programmed to web 2.0, other ICT facilities for web 2.0 are available and network for web 2.0 is poor in the library. This implies that when ICT facilities are available, it will ultimately improve and enhance use of web 2.0 technologies in services delivery. Baro, Edewor and Sunday (2014) in their study found that librarians in Africa are mostly familiar with Web 2.0 tools such as social networking sites (Facebook, Twitter, etc.), blogs, instant messaging and wikis. It was also found that the most frequently used Web 2.0 tools by the librarians in university libraries in Africa are Facebook, instant messaging, blogs, Twitter and wikis. The study also found that the librarians use the Web 2.0 tools for the purpose of announcing library news/events, online reference services, training resources, blogging and image and video sharing with users. Finally, the study found lack of skills, power failure, and lack of facilities such as computers with Internet access, lack of time and lack of interest were mentioned by the librarians as some of the challenges to using Web 2.0

tools. This finding justifies the Technology Acceptance Model (TAM) by Fred Davis in 1986 that perceived usefulness and perceived ease of use determine an individual's intention to use a system, with intention to use; serving as a mediator of actual system use. Perceived usefulness is also seen as being directly impacted by perceived ease of use. It is of the opinion that user acceptance of any technology is determined by perceived usefulness (PU) and perceived ease of use (PEU).

Result on Table 2, research question 2 revealed that the influence of staff attitude on adoption and use of web 2.0 technologies in services delivery was not significant. This influence may have arisen because with staff attitude, adoption and use of web 2.0 technologies in services delivery could be effective. Many staff shows a lot of interest on web 2.0 technologies, staff apathy to web 2.0 technology is high and many staff are ICT literate on web 2.0 technology. This implies that when staff attitude are encourage, it will ultimately improve and enhanced use of web 2.0 technologies in services delivery. Staff attitude to the acceptance and use of web 2.0 related facilities is germane, this may be the reason Agibili and Agibowo (2018), Onyeneke, Solomon and Uwakwe (2018) in their separate study found that ICT resources in university libraries are adopted in delivery services, staff attitude is critical to its success or failure. In a related study, Geraldin, and Vishhuu (2022) looks at institution culture as a significant factor that influences the attitude of staff towards the use of ICT in library services delivery. And found that the level of efficiency in library services delivery is based on the staff attitude which is influenced by institution culture. This finding justifies the Technology Acceptance Model (TAM) by Fred Davis in 1986 that perceived usefulness and perceived ease of use determine an individual's intention to use a system, with intention to use; serving as a mediator of actual system use. Perceived usefulness is also seen as being directly impacted by perceived ease of use. It is of the opinion that user acceptance of any technology is determined by perceived usefulness (PU) and perceived ease of use (PEU).

Conclusion and Recommendations

The concluded that availability of ICT facilities have significant influence on adoption and use of web 2.0 technology in library services delivery and that staff attitude has significant influence on adoption and use of web 2.0 technology in library services delivery in the universities in South-south, Nigeria. It therefore recommended that;

- Librarians should encourage themselves with Fred Davis 1986 theory of Technology Acceptance model by canvassing the usefulness of computers in enhancing their job performance with ease rather than fear of losing their jobs.
- It is also recommended that for smooth operation of web 2.0 technologies in the university libraries in the South-South zone of Nigeria Solar energy system as alternative sources of power should be embraced as we have the sun in abundance all-round the year.

REFERENCES

- Aina, A. J., Okunnu, H.O., & Dapo-Asaju, H.S. (2014). ICT integration for sustainable development of Nigeria academic libraries: Issues and challenges, *International Journal of Information Research* 3(4), 334-345
- Ajibili, D.O & Ajibowo, O.G (2018). The extent of utilization of open access resources in libraries of private universities by postgraduate students in Nigeria. *International Journal of Applied Technologies in Libraries and Information Management*, 4(1), 01-13
- Baro, E. E., Edewor, N & Sunday, G (2014). Web 2.0 tools: A survey of awareness and use by librarians in university libraries in Africa", *The Electronic Library*, 32(6), 864-883.
- Egbunuwele, E. G, Ola, O.S & Uduebor, E. A. (2014) Application of information and communication technology in academic libraries in Nigeria. *International Journal of Education and Research* 2 (12), 423-436
- Hussain, S. M. A & Haruna, M. (2021). Application and use of ICT in university library services: A panacea for conventional library services. *Journal of information technology and sciences* 7 (1), 6-12
- Nworie, J. C., Unegbu, M. C & Opara, I. (2022). Stewardship of librarians in academic libraries of the 21st century: A proposal for a theological doctrine approach. *International Journal of Academic Library and Information Science*, 10(2):50-5.
- Onyeneke, C.O., & Solomon U. B (2018). Using information and communication technology in promoting access to information needs of poultry farmers in Nigeria: A case study of Micheal Okpara University of Agriculture, Umudike. *International Journal of applied technology in library and information management*. 4 (1), 14-21.
- Ramzan M. & Singh, D. (2009). Status of information technology in Pakistan libraries *The Electronic Library* 27 (4) 154-587

- Rathi, D. & Given, L. M. (2010) Research 2.0: A framework for qualitative and quantitative research in web 2.0 environments. Proceedings of the 43rd Hawaii international conference on system Sciences
- Ribiera, V. M. & Haddad, M. (2010) The impact of national culture traits on the usage of web 2.0 technologies. *The Journal of Information and Knowledge Management Systems* 40 (3/4), 334-361
- Rouse, M. (2012). What is ICT?. "Information and communication technology or technologies" <http://searchciomidmarket.com/definition/ICT/>. Accessed 23/7/24
- Sutton, S.S. (2001). Trends, trend projections and crystal ball gazing. *Journal of Education for Library and Information Science* 42 (3), 241-247.
- Uhegbu, A. N. (2009). *Research and statistical methods in library and information science*. Owerri: Barloz Publication
- Unegbu, M. C. (2015). Influence of individual characteristics on the use of information and communication technology (ICT) by lecturers in library schools in south-east and south-south zones of Nigeria. *The International Journal of Humanities and Social Studies*. 3(9): 37-4
- Unegbu, M. C, Amaechi, N, Njoku, I & Opara, I (2015). Influence of socio-demographic variables on the use of information and communication technology (ICT) by lecturers in library schools in south-east and south-south zones of Nigeria. *International Journal of Humanities and Social Science Studies*. 11(11): 279-289.
- Unegbu, M. C, Ogugua, J. C, Nnadimele, O & Nse, J (2019). Gender influence on the use of information and communication technology by lecturers in library schools in south-east and south-south zones of Nigeria. *International Journal of Academic Library and Information Science*. 7 (5), 112-117.
- Unegbu, M. C & Ndulaka, O (2024). Emotional intelligence as a predictor of attitude to work and staff performance in polytechnic libraries in south-east, NIGERIA. *ISRG Journal of Arts, Humanities and Social Sciences*, II (I), 270-275