

Motivating factors influencing the Adoption and Use of Web 2.0 tools by Librarians in University Libraries in Nigeria: A test of the Technology Acceptance Model (TAM)

By

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Abstract

The study assessed the motivating factors influencing the adoption and use of Web 2.0 Tools by librarians in university libraries in Nigeria using a test of the Technology Acceptance Model (TAM). The population of the study comprises 70 librarians in five government owned university libraries in Edo and Delta States. The instrument used for data collection was a structured questionnaire. The data collected were analyzed using Spearman ranking. Results are presented in percentage, frequency in tables for clarity. The findings revealed that a majority of the respondents are aware of Web 2.0 tools to a very high extent. The finding also show clearly that Facebook is the most frequently used Web 2.0 tools, followed by Whatsapp, LinkedIn, and Twitter. The study shows that there is a significant relationship between perceived usefulness and ease of use and the adoption and use web 2.0 tools by librarians in university libraries. The study revealed that perceived usefulness has higher tendency to motivate the use of Web 2.0 than the ease of use by librarians in university libraries. The finding revealed that the major barriers to the adoption and use of Web 2.0 tools are poor funding by management, budget constraints, Poor library Policy/ Regulation, Insufficient access to good computers, and Poor Internet Access. It was recommended that there should be improved awareness and training in the use of Web 2.0, also there should be improved Internet access in university libraries to improve the use of Web 2.0 tools.

Keywords: Adoption; Use; Web 2.0; Librarians; University Libraries; Nigeria; Technology Acceptance Model (TAM)

Introduction

In libraries, information and communication technology (ICT) has become the most widely utilized instrument for accessing, retrieving, and disseminating resources. ICT has provided validity to university libraries fulfilling the vital role that they are known for around the world, which includes teaching, learning, research, and recreational needs of the communities they serve. Librarianship as a field is undergoing a transformation in the twenty-first century, from traditional library services to automated services influenced

by the use of technology. The manner librarians' access, process, disseminate, and utilise the information they gather has changed dramatically as a result of this transformation. In Nigerian university libraries, the acceptance and use of Web 2.0 tools is growing.. Web 2.0 technologies have gained significance in the twenty-first century as a result of its increasing adoption and use by university libraries for the projection of their services and resources.

However, Kenton (2020) defined Web 2.0 as the current state of the web, which includes more user-generated content and usability for end-users compared to its earlier incarnation, Web 1.0. Kenton (2020) further claimed that Web 2.0 does not pertain to any particular web technical upgrades. It simply refers to a change in how people use the Internet. There is a greater level of information exchange and interconnectivity among individuals in the new Digital age. In Africa, and particularly in Nigeria, the adoption and usage of Web 2.0 tools by university libraries is still in its infancy stage (Lwoga, 2011; Madu, Idoko, Dirisu & Emerole, 2017). Web 2.0 holds a lot of promise for university libraries since it can help promote library services and resources while also improving communication between librarians and users. Several Web 2.0 services are free to use; all that is necessary is the creation of a profile for the university library (Facebook, Whatsapp, Twitter, Instagram, and so on). Despite these benefits to university libraries, adoption in Nigeria remains low. Other problems that may contribute to librarians' limited adoption and use of Web 2.0 include: limited bandwidth, time constraints, insufficient training, a lack of funding to attend training, insufficient power supply, and a lack of web 2.0 competence. (Okonedo, Azubuike & Adeyoyin, 2013).

This study is based on the premise that no one is born knowing and skilled in the use of technology. On the basis of certain factors, one may accept the usage of any technology. The factors proposed by Davis

in 1989 are some of the most common factors influencing the usage of technology that have been documented in the literature. This paper takes a critical look at those factors influencing the adoption and use of web 2.0 tools by librarians, while testing the Technology Acceptance Model (TAM) propounded by Davis (1989). TAM is a theory of information systems that describes how people embrace and use technology. When users are faced with new technology, the model argues that a number of factors, including perceived usefulness and perceived ease of use, impact their decision about how and when they will utilize it. Similarly, some research has found that characteristics including awareness, perceived usefulness, and perceived ease of use might influence librarians' acceptance, adoption, and use of web 2.0 tools. As a result, the focus of this research is on the motivating factors that influence librarians' adoption and usage of web 2.0 tools in Nigerian, with special reference to university libraries in Edo and Delta States.

Research Questions

The study will provide answers to the following research questions:

1. What is the extent of awareness of web 2.0 tools among librarians in university libraries in Nigeria?
2. What is the frequency of usage of web 2.0 by librarians in Nigeria?
3. What is Librarians perception of the Usefulness and Ease of Use of Web 2.0?
4. What is the competency level of librarians in the use of web 2.0 tools?
5. What are the barriers to the adoption and use of web 2.0 tools in university libraries in Nigeria?

Literature Review

Awareness of web 2.0 tools by Librarians in University Libraries

A lot of studies have been carried out on the awareness of web 2.0 tools by librarians in university libraries. Hussain (2018) researched on the awareness and utilization of Web 2.0 technology in academic libraries from the perspective of Islamabad. According to the survey, 65 (90.27 percent) of the participants were aware of Web 2.0 technology in their academic libraries, whereas 7(9.72 percent) were not. In their study of librarians' awareness and usage of Web 2.0 applications in Nigerian university libraries, Baro, Idiodi, and Godfrey (2013) discovered that librarians were more familiar with social networking sites, instant messaging, media sharing sites, blogs, and wikis. Also, Baro, Edewor and Sunday (2014) carried out a survey of Web 2.0 awareness and use by librarians in university libraries in Africa revealed 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. In the same vein, some studies have shown high level of awareness and use of Web 2.0 Technologies in libraries and among information professional in Nigeria (Okonedo, Azubuike & Adedoyin, 2013; Chikate & Randhir, 2013; Eze, 2016).

Frequency of Use of Web 2.0 tools by Librarians in University Libraries

On frequency of the use Web 2.0 tools, Oyovwe-Tinuoye, Krubu and Ijiekhuamhen (2017) studied usage of Web 2.0 tools by academic librarians: A case study of university libraries in South- South, Nigeria. The study revealed that 141 (73%) of the respondents use Web 2.0 tools on a daily basis, 34 (17%) use it weekly and only 19 (10%) of them indicated that they use it monthly. The study implies that a vast majority of Librarians from South- South Nigeria uses web 2.0 tools on a daily basis. In a similar study by Xu, Ouyang and Chu (2009) who surveyed 81 academic libraries in New York state revealed that less than half (42%) of the libraries adopted one or more web 2.0 tools. Instant messaging takes the lead in terms of

frequency of use, followed by blogs and RSS. Corroborating, Baro, Edewor and Sunday (2014) found out that most frequently used Web 2.0 tools by the librarians in university libraries in Africa are Facebook, instant messaging, blogs, Twitter and wikis. Rehman and Shafique (2011) studied the use of Web 2.0 and its implications for libraries focusing on the Perceptions of information professionals in Pakistan. The respondents were asked different questions to ascertain the level of using different web 2.0 applications. Descriptive statistics show that most of the respondents were using E-mail groups (LISTSERVS) daily (mean= 5.69). The second most favorite Web 2.0 application according to the usage scale is the Instant Messenger, which was used twice/thrice a week (mean= 4.66). Wikis and social networking sites were used weekly (mean values are 4.35 and 4.04 respectively). On the other hand social bookmarks, video sharing sites and blogs were used fortnightly (mean values are 3.49, 2.99 and 2.75 respectively). Images sharing, RSS and micro blogging sites were used monthly (mean= 2.07).

Perceived Usefulness and Ease of Use of Web 2.0 tools by Librarians

According to Davis (1989), users' acceptance of a given technology is affected by their perceptions on the usefulness and ease-of-use of that technology. However, Mwantimwa and Nkhoma-Wamunza (2017) studied perception on adoption and application of Web 2.0 technologies in selected academic Libraries in Tanzania. The findings show that 77.5% of the respondents said Facebook was the most useful social network identified. This was followed by google groups (67.5%) and YouTube (52.5%). 70% of the librarians in the selected university libraries (UDSM and SUA) were of the opinion that effective integration of Web 2.0 technologies can strengthen library operations and services. Williams (2018) studied the adoption of Web 2.0 technologies in academic libraries. The results demonstrate that 'ease of use' was portrayed as a beneficial construct and has a positive influence on behavioural intention and use of Web 2.0

technologies. Furthermore, Muneja and Abungu (2013) asserted that among the challenges of using web 2.0 tools in our libraries in Africa was lack of technical knowhow on the side of the librarians.

Competency level of librarians in the use of web 2.0 tools

However, Oyieke and Dick (2017) undertook a study on empowering academic librarians for effective e-services. The findings of the study revealed that majority of the librarians have intermediate competency levels in Web 2.0 technologies. The findings further revealed that Web 2.0 competencies can transform knowledge-sharing activities, augment existing authoritative information service, foster interaction and market information products and services. Ascroft & Wetts (2005) affirmed that lack of competencies is a major impediment to the use of Web 2.0 tools. Tyagi (2012) studied the adoption of Web 2.0 technology in higher education: A case study of universities in the National Capital Region, India. The findings of this study indicated that a significant portion of the respondents had good knowledge about the Web 2.0 tools. Singha and Sarmah (2015) carried out a study on Web 2.0 tools in enhancing the best practices of user services in academic libraries: A comparative study of central university libraries in Assam State. It was observed that all of the respondents have sufficient knowledge of Web 2.0 tools. Thanuskodi (2012) carried out a study on awareness of library 2.0 applications among library and information science professionals at Annamalai University, India. The findings showed that there was moderate knowledge among LIS professionals with Library 2.0 applications. The findings also indicated that there was a high level of computer expertise among the respondents in terms of web browsers and search engines, in addition to high level of utilization in some of the Web 2.0 applications

Barriers to the adoption and use of web 2.0 tools in university libraries

In a study, Santosh (2016) investigated the adoption of Web 2.0 applications in academic libraries in India. The findings revealed that the major barriers perceived include accessibility of the internet by users, lack of incentives, institutional support, technical support, training, and resources. Hussain (2018) studied awareness of Web 2.0 Technology in the academic libraries: An Islamabad Perspective. The time consumption and fear of misusing personal information are some major obstacles by using Web 2.0 technologies in the library services. Rakshikar (2017) studied use of Web 2.0 for creating scholarly communication by library professional in India. The findings revealed that major barrier to take-up of web 2.0 tools and services for research are a lack of awareness and clarity. The second set of barriers revolves around perceptions of authenticity, quality and trust. Validity and reliability are also concerns for researchers who are producing, rather than consuming, information through the use of web 2.0. Ram, Kataria, Hopkinson, and Paliwal (2010) carried out a study on acceptance and usage of Web 2.0 services in libraries. The findings of their study revealed that librarians are not eager to use Web 2.0 tools because they are not familiar with them, technical reasons, poor administrative support, timeconsuming, so many web 2.0 tools not able to decide which one to use, among other factors. The study of Gichora and Kwanya (2015) revealed that the effective use of Web 2.0 tools in academic libraries in Kenya is hampered by infrastructural, technical, technological and cultural challenges.

Theoretical Framework

This research is on motivating factors influencing the adoption and use of web 2.0 tools by librarians in university libraries in Nigeria. The theoretical model that will be adopted for this study is the Technology

Acceptance Model by Davis 1986. The TAM suggests that when users are presented with a new technology, a number of factors determine their decision about how and when they will use it (IGI Global, 2019). Based on the theory of reasoned action, Davis (1986) established the Technology Acceptance Model, which focuses on the prediction of an information system's acceptability. The goal of this model is to anticipate a tool's acceptance and to indicate the changes that must be made to the system in order for it to be acceptable to users. According to this model, an information system's acceptability is defined by two key factors: perceived usefulness and perceived ease of use. The degree to which a person believes that using a system will improve his performance is characterized as perceived usefulness. The degree to which a person believes that using a system will be simple is referred to as perceived ease of use. (Davis, 1986).

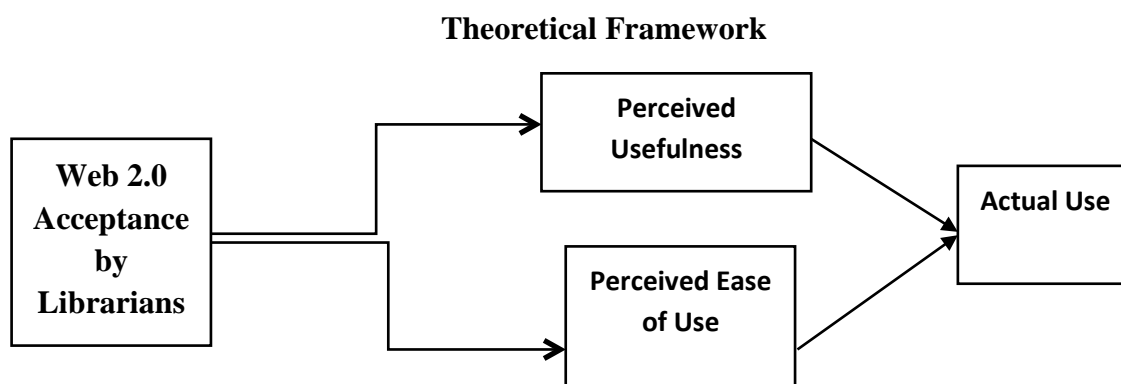


Figure 1: Theoretical Model: Web 2.0 Acceptance Model adapted from the Technology Acceptance Model by Davis 1986

The study will refer to Web 2.0 as an example of a new innovation in university libraries. Going by the Technology Acceptance Model by Davis 1986, the factors that could influence the adoption and use of Web 2.0 by librarians is perceived usefulness and perceived ease of use. If librarians perceive Web 2.0 tools as useful, the likelihood to adopt and use it will be high on the contrary if they perceive it as not useful, the

likelihood to adopt and use it in their university library will be low. In the same vein, if librarians perceive Web 2.0 as easy to use, the likelihood to adopt and use it will be high. If they perceive it as complex and very difficult to use, the likelihood to adopt and use them will be low.

Research Methodology

Descriptive survey research design was adopted for the study and the instrument used to elicit data from the respondents was a structured questionnaire. The population of the study comprises librarians in five government owned university libraries in Edo and Delta States, with a total population of 70 Librarians. Total enumeration sampling technique was adopted for the study. The instrument used for data collection was a structured questionnaire, with the aid of two research assistant. Data collected were analyzed using Statistical Package for Social Sciences (SPSS) and Spearman ranking. Results are presented in percentage, frequency in tables for clarity.

Results and Discussion

Section A: Analysis of Demographic Distribution of Respondents

Table 1: Questionnaire Return Rate

No of Questionnaire Distributed	No of Questionnaire Retrieved	% of Return
70	70	100%

It was revealed from Table 1 that a total of 70 copies of the questionnaire were distributed to the respondents, and all the 70 copies were returned and found usable for the study. The study yielded a 100% return rate, this go a long way to show the level of efforts put in to retrieve all the copies distributed, kudos also to the research assistants.

Table 2: Distribution of Respondents by gender

Gender	No of Respondents	Percentage
Male	41	59%
Female	29	41%
Total	70	100%

Result in **Table 2** shows that 41(59%) of the respondents are male and 29 (41%) of the respondents are female.

Table 3: Distribution of Respondents by University Libraries

University Library	Frequency	Percentage
Federal University of Petroleum Resources Effurun Library (FUPRE)	8	11%
University of Benin Library (UNIBEN)	24	34%

Delta State University Library (DELSU)	21	30%
Ambrose Alli University Library (AAU)	13	19%
Edo University Library Iyamho	4	6%
Total	70	100%

Results in **Table 3** revealed that 8 (11%) of the respondents are from FUPRE library, 24 (34%) are from UNIBEN Library, 21 (30%) of the respondents are from DELSU Library, 13 (19%) of the respondents are from AAU Library while 4 (6%) of the respondents are from Edo University Library.

Research Questions One

What is the extent of awareness of web 2.0 tools among librarians in university libraries in Nigeria?

Table 4: Awareness of web 2.0 tools among librarians in university libraries

What is the extent of awareness of web 2.0 tools among librarians in university libraries in Nigeria?

Awareness of Web 2.0 Tools	Frequency	Percentage
I am aware of Web 2.0 tools to a Very High Extent	49	70%
I am aware of Web 2.0 tools to a High Extent	17	24.2%
I am aware of Web 2.0 tools to a Low Extent	3	4.2%
I am aware of Web 2.0 tools to a Very Low Extent	1	1.4%
Total	70	100%

The result in **Table 4** indicates that 49(70%) of the respondents are aware of Web 2.0 tools to a Very High Extent, 17(24.2%) High Extent, 3(4.2%) Low Extent and 1(1.4%) Very Low Extent.

The findings revealed that a majority of the respondents are aware of Web 2.0 tools to a very high extent. This finding is in agreement with the study of Hussain (2018) which revealed that about 90.27% of the respondents are aware of Web 2.0 technology.

Research Questions Two

What is the frequency of usage of web 2.0 by librarians in Nigeria?

Table 5: Frequency of usage of web 2.0 by librarians in university libraries

What is the frequency of usage of web 2.0 by librarians in Nigeria?

Web 2.0 tools	Daily %	Weekly %	Twice a month %	Once a month %	Quarterly %	Total	%
Facebook	58 (83%)	7 (10%)	5 (7%)	-	-	70	100
LinkedIn	9 (12.8%)	41 (58.5)	7 (10%)	6 (8.5%)	4 (5.7%)	67	96%
Twitter	17 (24.2%)	38 (54.2%)	5 (7.1%)	4 (6%)	3 (4%)	67	96%
Whatsapp	49 (70%)	7 (10%)	5 (7%)	6 (8.5%)	3 (4%)	70	100%
Blogging	4 (5.7%)	15 (21.4)	10 (14%)	6 (8.5%)	1 (1.4%)	36	51%
Instant Message	5 (7.1%)	15 (21.4)	8 (11.4%)	5 (7.1%)	1 (1.4%)	34	48%
Real Simple Syndication	1 (1.4%)	6 (8.5%)	2 (2.8%)	2 (2.8%)	-	11	16%
Podcasting	-	3 (4%)	1 (1.4%)	1 (1.4%)	-	5	7%
Wikis	2 (2.8%)	4 (6%)	2 (2.8%)	2 (2.8%)	1 (1.4%)	11	16%
Vidcasts	1 (1.4%)	3 (4%)	-	1 (1.4%)	-	5	7%

Social sharing services	1 (1.4%)	2 (3%)	1(1.4)	1(1.4)	1(1.4%)	6	9%
3D Virtual environment	1 (1.4%)	2 (3%)	1(1.4 %)	1(1.4%)	1(1.4%)	6	9%
Bookmarking	1 (1.4%)	2(3%)	1(1.4 %)	1(1.4%)	1(1.4%)	6	9%

Results in Table 5 revealed that Facebook is the most frequently used Web 2.0 tools, followed by Whatsapp, LinkedIn, and Twitter while Blogs, Instant Message, Real Simple Syndication, Podcasting, Wikis, Vidcasts, 3D visual environment and Bookmarking are not frequently used.

This finding aligns with the study of Baro, Edewor and Sunday (2014) which revealed that the most frequently used Web 2.0 tools by the librarians in university libraries in Africa is Facebook. The finding disagrees with the study of Rehman and Shafique (2011) which revealed that most of the respondents were using Email groups (LISTSERVS) daily (mean= 5.69). The second most favorite Web 2.0 application according to the usage scale is the Instant Messenger, which was used twice/thrice a week (mean= 4.66).

Research Questions Three

What is Librarians perception of the Usefulness and Ease of Use of Web 2.0?

Table 6: Perceived Useful and Ease of Use of Web 2.0 by librarians

What is Librarians perception of the Usefulness and Ease of Use of Web 2.0?

	Perceived usefulness of Web 2.0	X	Ease of use of Web 2.0	Y	d	d₂
1	Facilitates collaboration	70	Easy to use	69	1	1
2	Boost communication between	70	Easy to learn	69	1	1

	librarians and patrons					
3	Enhance reference services	65	Easy to implement	65	0	0
4	Improve users education	68	Require little or no training	68	0	0
5	Improve services	68	Easy to communicate with	68	0	0
6	Enhance marketing	68	Easy to upload files	68	0	0
7	Boost current awareness	65	Easy to update information	64	1	1
N=7		474	Σ	471		3

Spearman ranking, $r = 1 - \frac{6 \sum d^2}{n^2 - 1}$

$$1 - \frac{6 \times 3}{49 - 1} = 1 - 0.375 = 0.625$$

49-1

Table 6 present results on the respondents’ perceived usefulness and ease of use of web. 2.0. From the result, $d = X - Y$, X is the perceived usefulness; Y is perceive ease of use and r is the spearman ranking coefficient which is 0.625. This shows that there is a significant relationship between “perceived usefulness” and “ease of use” and the adoption and use of web 2.0 tools by librarians. From Table 6 perceived useful of Web 2.0 have a total mean value of 474 while ease of use has a total mean value of 471. The Spearman calculation of coefficient showed that there is square difference of 3 and Spearman coefficient of 0.625. This implies that perceived usefulness has higher tendency to motivate the use of Web 2.0 than the ease of use. The usefulness makes the users to develop interest in the use of web 2.0 tool. The result correlates with the result of Davis in 1989 that in both studies, usefulness had a significantly greater correlation with usage behavior than did ease of use. Regression analyses suggest that perceived ease of use may actually be a

causal antecedent to perceived usefulness (Davis, 1989). The result on “perceived usefulness” and “ease of use” indicates that when a new technology or tool facilitates collaboration, boost communication, enhance services and boost current awareness services in the library, librarians would likely use it.

The study shows that there is a significant relationship between perceived usefulness and ease of use and the adoption and use web 2.0 tools by librarians in university libraries. The result indicates that a vast majority of the respondents are competent in the use of Web 2.0 tools. This finding aligns with the study of Sarmah (2015) which revealed that all of the respondents have sufficient knowledge of Web 2.0 tools in central university libraries in Assam State. The finding also agrees with the findings of Tyagi (2013) which revealed that a significant portion of the respondents had good knowledge about the Web 2.0 tools in universities in the National Capital Region, India. Research Questions Four

What is the competency level of librarians in the use of web 2.0 tools?

Table 7: Competency level of librarians in the use of web 2.0 tools

What is the competency level of librarians in the use of web 2.0 tools?

Competency Level in the use of Web 2.0	VHL	HL	LL	VLL	Total	%
I can browse the internet competently	61	5	3	1	70	100%
I can sign up accounts using most of the Web 2.0 tools	57	7	3	2	69	99%
I can upload videos using YouTube	39	9	6	12	66	94%
I can upload videos and pictures using Facebook	60	7	2	1	70	100%
I can make audio and video calls using Whatsapp	51	12	4	2	69	99%
I can use Skype for Video Conferencing	30	19	12	4	65	93%
I can connect with my users on LinkedIn	48	11	5	3	67	96%
I can share links of books and articles using Facebook	49	12	4	2	67	96%
I know how to use chat services provided by most of the Web 2.0 tools	51	9	4	5	69	99%

I know how to make announcements using Web 2.0	37	12	3	4	56	80%
I know how to do user education with the use of Web 2.0	56	6	4	1	67	96%

Table 7 result indicates that a vast majority of the respondents are competent in the use of Web 2.0 tools. The areas they require training is the use of Skype for video conferencing.

Research Questions Five

What are the barriers to the adoption and use of web 2.0 tools in university libraries in Nigeria?

Table 8: Barriers to the adoption and use of web 2.0 tools

What are the barriers to the adoption and use of web 2.0 tools in university libraries in Nigeria?

Barriers to the Adoption of Web 2.0 in University Libraries	Frequency	%
Inadequate time to explore and use Web 2.0 tools	27	39%
Inadequate knowledge and skills in the usage of Web 2.0	12	17%
Insufficient access to good and working computers	59	84%
Poor funding by management to plan full implementation of Web 2.0	70	100%
Poor library Policy/ Regulation	64	91%
Security and Privacy Issues	41	59%
Insufficient training on Web 2.0 usage	21	30%
Budget constraints	67	96%
Erratic Power Supply	28	40%
Poor Internet Access	49	70%

The major barriers to the adoption and use of Web 2.0 tools as indicated in **Table 8** are Poor funding by management, Budget constraints, Poor library Policy/ Regulation, Insufficient access to good and working computers, and Poor Internet Access. These barriers are all management responsibility. While Inadequate time to explore and use Web 2.0, Inadequate knowledge and skills, Insufficient training and Erratic power

supply are not so much a barrier to the adoption and use of Web 2.0 tools by librarians in university libraries.

This finding correlates with the study of Santosh (2017) which revealed that the major barriers in the use of Web 2.0 as indicated by the respondents include accessibility of the internet by users, lack of incentives, institutional support, technical support, training, and resources.

Conclusion

Technologies are emerging and its use is on the increase in university libraries. One of such technology that has gained prominence in the 21st century libraries is Web 2.0 tools. Librarians in university libraries in Nigeria are increasingly embracing the use of web 2.0 as they remain inevitable tools for service delivery in the modern day library. This study has helped to validate TAM which reveals that perceived usefulness and perceived ease of use have influence on the acceptance and adoption of Web 2.0 tools in university libraries in Edo and Delta State of Nigeria. The study reports that perceived usefulness motivates the adoption and use of web 2.0 tools than perceive ease of use. Librarians in university libraries in Nigeria are aware of Web 2.0 tools to a Very High Extent. However, Facebook is the most frequently used Web 2.0 tools, followed by Whatsapp, LinkedIn, and Twitter while Blogs, Instant Message, Real Simple Syndication, Podcasting, Wikis, Vidcasts, 3D visual environment and Bookmarking are not frequently used. This could be attributed greatly to the popularity of Facebook, Whatsapp, LinkedIn and Twitter in Nigeria. While Instant Message, Real Simple Syndication, Podcasting, Wikis, Vidcasts, 3D visual environment and Bookmarking are yet to penetrate the Nigerian social society.

Librarians in university libraries in Nigeria are competent in the use of Web 2.0 tools though some factors are militating against the full implementation and use of Web 2.0 tools such as poor funding by management, budget constraints, poor library Policy/ regulation, insufficient access to good and working computers, and poor internet access.

Recommendations

In view of the following aforementioned barriers, the following recommendations are made:

1. There should be improved awareness and training in the use of Instant Message, Real Simple Syndication, Podcasting, Wikis, Vidcasts, 3D visual environment and Bookmarking to enhance their use in university libraries.
2. There should be improved Internet access in university libraries to improve the use of Web 2.0 tools.
3. Funding should be made available for libraries to enable the subscription to internet service providers to enhance the use of Web 2.0 tools in libraries.
4. There should be increased budgetary allocation for university libraries to increase their use of Web 2.0 and other emerging technologies.
5. Policies/ regulations should be formulated that enhance the use of Web 2.0 in university libraries.
6. All the necessary hardware and software required for the use of Web 2.0 tools should be made available to university libraries.
7. Alternative power supply should be made available to university libraries to complement the power supplied through the national grid by the government.

8. Librarians should strive to develop interest in the use of new technologies like Web 2.0 tools that could enhance their services.

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