

AVAILABILITY AND UTILIZATION OF MOBILE APPS AND SOCIAL MEDIA IN LIBRARIES BY STUDENTS' OF FEDERAL POLYTECHNIC IN NORTH CENTRAL NIGERIA

Hajara JIBRIL(Phone No: 07035577793; E-mail: hajo.jibril@futminna.edu.ng)

Librarian II.

Ibrahim Badamasi Babangida Library, FUT Minna, Niger State, Nigeria

HUSSAINI MUSA (Phone No: 08036201118; E-mail: hussaini.musa@futminna.edu.ng)

AG. HOD BOSSO CAMPUS LIBRARY FUT MINNA UNIVERSITY LIBRARY SERVICES PMB. 65 MINNA
NIGER STATE NIGERIA

&

HUSSAINI ALIYU ABUBAKAR (Phone No: 07038894147; E-mail: hussaini.abu@futminna.edu.ng)

GOVERNMENT DOCUMENT LIBRARIAN.

CENTRAL LIBRARYFEDERAL POLYTECHNICS IDDAH, KOGI STATE, NIGERIA

Contents

Abstracts	2
Introduction.....	3
Statement of the Problem	5
Objectives of the study.....	5
Literature Review.....	5
Research Methodology.....	7
Results and Discussion.....	7
Availability of Social media Tools and Mobile Apps Services in the Studied Institutions	9
Level of Usage of Social media Tools and Mobile Apps Services in Polytechnic Libraries Studied.....	10
Summary of Major Findings	13
Discussion of the Findings	13
Demographic information	14
Research question 1: Availability of social media tools and mobile Apps services in Polytechnic libraries in North-Central Nigeria.....	14
Research question 2: Level of usage of mobile Apps services and social media in Polytechnic libraries studied.....	14
Conclusion	15
Recommendations	16
Reference	17

Abstracts

The study examined availability and Utilization of Mobile Apps and Social Media in Libraries by Students' of Federal Polytechnics in North Central Nigeria. The study was conducted using two main objectives. They are: determine the types of mobile Apps and social media tools that are available in the studied polytechnics libraries and ascertain the level of usage of mobile apps and social media tools in the selected polytechnics studied. The target population of the study was one fifty-six thousand four hundred and forty-six (56,456). This consisted of fifty sixteen thousand, four hundred and forty-four (56, 444) Polytechnic students, six (6) Polytechnic librarians and six (6) heads of system/ICT units. The sample size for the study was 275 polytechnics students. The instruments used were a self-designed closed ended structured questionnaire and observation check-list. Descriptive statistics such as frequency counts, percentages, mean and standard deviation were used to measure demographic characteristics of respondents and other variables while for inferential statistics. Findings from the study revealed that Mobile Apps and Social Media services were available in the studied universities while university of Nassarawa polytechnics had the highest Mobile Apps and Social Media tools and mobile technology services among the studied institutions. Blogs, Facebook, text messaging and e-mail sending and receiving were the most used Mobile Apps and Social Media services. The study recommended that there should be provision of sufficient Social Media, develop an in-house mobile technology apps and a dedicated standalone library website and increase Internet bandwidth.

Key Words: Mobile Apps, Social Media, polytechnics, North Central Nigeria, availability, Library

Availability and Utilization of Mobile Apps and Social Media in Libraries by Students' of Federal Polytechnics in North Central Nigeria

Introduction

Libraries exist in order to provide various information for users in order to satisfy their information needs. The Polytechnic libraries normally advance in research and teaching by supporting quest for new knowledge through scholarship, dissemination of knowledge, teaching and creative experimentation of ideas and concepts; foster culture of service in supporting schools, students, staff and communities around. Polytechnic libraries also support educational activities through technical services such as providing access to institutional repositories, interlibrary loan and document delivery services.

Sewell and Kingsley, (2017) disclosed that the academic libraries play a major role in the information literacy education of students by arranging information literacy activities for them in form of training programmes, online and other self-learning programmes. These services are rendered by the Polytechnic libraries in order to attract users to the libraries. This is one of the ways to justify the existence as well as the relevance of the libraries in the society.

Use of library is a criterion that can be used to justify the availability, awareness and evaluation of the performance of the facilities and services rendered in a library. "Use" is a concept that examines how objects are being exploited to produce the maximum value for which they were designed. Abubakar and Chollom, (2017) described use as a concept that has to do with value or appreciation and where an item or object has no value it cannot be put to use. Thus, as generally believed if something is valuable it is likely to be used. Therefore, the use of Polytechnic library could be described as the physical selection of any library resources and the act of reading through the pages (Isaac 2019). Today libraries could also be used without geographical restrictions using information and communication technology (ICT).

Polytechnic students, schools' members and other users of libraries make tremendous use of mobile Apps, social media and databases for research activities, assignments and seminar papers. In a survey conducted by Hamad, Farajat and Hamarsha (2018) regarding the use of mobile devices showed that library users use mobile Apps to access library databases and other library services. The researchers observed as well that students place great emphasis on the use of mobile devices so as to have mobile access to electronic contents of the library.

Mansouri and Asl (2019) revealed that library users (especially students) who possess web-enabled handheld devices indicated that they use their devices such as tablets, smart phones, PDAs, web-enabled cell phones to access a library OPAC. Furthermore, Devi and Keshava, (2021) in their study of E-Resources: Perception and Use by Ayurvedic Medical College Library Users of North Karnataka in India confirmed that they make use of mobile devices such as smart phones and tablets to access online databases; indicating that mobile Apps and databases are facilitators of use of library, not only by students but also the school's members.

Therefore, for effective library services and use of libraries to be achieved and facilitated there is need for the provision of adequate ICT facilities such as mobile Apps like Personal Digital Assistant, Tablets and Smartphones to be provided and allowed to be used in the libraries. This would in no small measure enhance students' academic pursuits. Information sources such as Laptops, Smartphones, Tablets, PDAs, devices are sources that contain information used by scholars for researches, classroom assignments and leisure purposes. Many of these information sources are

categorised or usually referred to as mobile Apps. Mobile Apps provide easy access to information resident in databases and the library without geographical restrictions. These among other attributes no doubt makes them facilitators of use of library.

The advent of Information and Communication Technology (ICT) generally, with particular emphasis on mobile Apps has improved the level of information access among individuals in any information centre. Mobile Apps such as laptops, smart phones and tablets have greatly made communication and access to information very convenient and timely to users from the comfort of their homes, hostels, offices, while on transit and even play grounds at any given time. Heflin, Shewmaker and Nguyen (2017) affirmed that digital technologies have provided faster access to information and also compelling libraries to rethink and remodel the services they deliver by imbibing the technological changes. The co-researchers also deduced that the existence of mobile Apps would be of immense help to libraries towards strengthening their relationships and enhancing user-oriented services to existing users.

Today, libraries in developed countries are serving their users better by embracing the growing capabilities of mobile Apps. They promote and expand their existing services by offering mobile access to their websites and online public access catalogs by supplying on-the-go mobile reference services; and by providing mobile access to e-books, journals, video, audio books, and multimedia content. Margam and Dar (2017) revealed that 66 percent of public libraries offered e-books to their users (up from 55 percent the previous year). Similarly, the study reported that 83 percent of libraries offer online audio content, and about 63 percent offer online video content. Thus, audio/video collections are no longer composed only of physical units to borrow, but increasingly are streamed on-demand or downloaded, circulating content in urban, suburban, and rural libraries across America.

Mobile Apps such as Personal Digital Assistant (PDA) also known as a handheld PC, or personal data assistant, is a device that functions as a personal information manager with a lot of information and should be used within and outside the library environment. The term evolved from Personal Desktop Assistant, a software term for an application that prompts or prods the user of a computer with suggestions or provides quick reference to contacts and other lists.

A typical PDA has a touchscreen for entering data, a memory card slot for data storage, Bluetooth and/or Wireless Fidelity (Wi-Fi). However, some PDAs may not have a touch screen, using soft keys, a directional pad, and a numeric keypad or a thumb keyboard for input. This is typically seen on telephones that are also PDAs. To have the functions expected of a PDA, a device's software typically includes an appointment calendar, a to-do list and an address book for contacts, a calculator, and some sort of memo (or "note") programme. PDAs with wireless data connections also typically include an email client and a Web browser. This particular device would not only assist students to use information resources even outside the library building, or transferring information in the library but would also enable them enter and store data from library resources for their personal use (Almeida, Furtado and Furtado 2020).

From the foregoing, it is necessary to state that Polytechnic libraries play a vital role in dissemination of information to users. This could adequately be achieved if mobile Apps and social media are available in the libraries and its environs. Polytechnic students' use of library will be enhanced where the library environment is found attractive and inviting. The analysis of mobile Apps and social media no doubt revealed they are adequate facilitators of good library services (Oyedokun, Oyewumi and Laaro, 2018 & Al-Qallaf and Ridha 2019). Polytechnic students need to be proficient in their fields of study by constantly visiting and using library resources and where these resources do not

suit or meet their demands, they would not regularly visit the library and this would have a negative impact in their academic pursuits. Students' academic performance depends a lot on how well they use library resources as these resources supplement and compliment classroom teaching. The study, therefore, investigated mobile Apps and social media as enabler of use of Polytechnic libraries

Statement of the Problem

Polytechnic libraries are established in order to support the teaching, learning, research activities and community services of their parent institutions. For adequate functioning of Polytechnic libraries, Polytechnic administrations usually support their libraries with current information resources available in both print and electronic formats. Today, libraries worldwide are serving their users better by embracing mobile and other technologies as these allow them to expand and promote the already existing services. Mobile devices and services therefore provide tremendous flexibility for those who wish to take advantage of library services.

However, in Nigeria, some Polytechnics have adopted the use of mobile Apps and Social mediaenvironment in order to serve their clients better, while majority of them are yet to do this. Preliminary investigation and observation also showed that these services are not fully explored by the users wherever they are available. This situation is worrisome, considering the huge amount of money spent by the Federal government on Polytechnics through TETFund in order to provide digital and virtual libraries so as to improve the rate of information dissemination to library users. The researcher also observed that most users in Polytechnic do not visit the libraries with social mediatools and mobile Apps services that would have been explored by the library users their own mobile Apps to explore some library services. Could it be that they are not available, or are there no relationship between the use of social mediatools, mobile Apps and use of library? Or probably there could be some other factors militating against the use of these facilities despite the fact that ICT facilities and mobile Apps in particular are generally regarded as facilitators of use of Polytechnic libraries worldwide. It is based on this background that this study sets to investigate mobile Apps and Social mediaas enablers of use of Polytechnic libraries in some selectedPolytechnics in NorthCentral, Nigeria.

Objectives of the study

The aim of the study is to examine mobile Apps and social mediaas facilitators of use of Polytechnic libraries. The specific objectives are to:

1. Determine the types of mobile Apps services and social mediatools that are available in Polytechnic libraries in North-Central Nigeria;
2. Ascertain the level of usage of mobile Apps and social mediatools in Polytechniclibraries studied;

Literature Review

Lee, Leow and Kong (2020) viewed mobile Apps as new communication tools that are transforming how people can search for information, receive the information and interact with the information on every day basis. These mobile phone tools offer convenient access to the world information, across borders of subject, discipline and organization. In present day, developed countries are using lack of access to affordable Internet.

There are dozens of different mobile devices in the market, Bikos and Papadimitriou (2018) aptly and succinctly defines them as follows: “The reality is that mobile devices can refer to essentially any device that someone uses on the go” such as Smart phones, tablets, notebooks, e-readers, gaming devices, PDAs, iPads and iPods are examples of mobile devices that are now common on campuses. Mishra, Jha and Umre (2017) define these mobile Apps devices as “network, portable and handheld”. Maideen (2017) stated that these devices may be used to read, listen to music and watch videos. Al-Qallaf and Ridha (2019) in their study revealed that some technologies serve as emerging foundation for web 2.0. These are Blogs, Really Simple Syndication (RSS), Instant Messaging, Wiki, Podcasting, Social Networking, Photo Sharing, Social Bookmarking, Tagging and Mashups. In another study Uche and Udo-Anyanwu (2019) referred to Social media as a collection of web-based technologies like blogs, wikis, audio-podcasting, RSS feeds, social bookmarking and tagging, social networking, multimedia sharing and so on

Kompen, Edirisingha, Canaletta, Alsina and Monguet (2019) defined Social media as a set of trends and tools for using the Internet. He further explained that these socio-technological innovations have enabled interactivity and gathering of knowledge through experience and practice on a global scale. The concept of collaborative work, social networking and the ease in the usage of these applications have brought a significant change in the Internet usage style of Internet surfers in the world.

Dhungana and Bulut (2020) stated that Social media is the interactive version of web-based communities and social networking websites like Facebook, Orkut, LinkedIn, etcetera. It also included video sharing, wikis, blogs, mashups, to mention but a few. The second generation of web is commonly referred to as Web 2.0. The term ‘Web 2.0’ is commonly associated with web applications that facilitate interactive information sharing, interoperability, user-centered design, and collaboration on the World Wide Web. Examples of Social media include web-based communities, hosted services, web applications, social networking sites, video sharing sites, wikis, blogs, mashups, and folksonomies.

Alhabash and Ma (2017) carried out an exploratory study on the use of Facebook, RSS, Blogs and Twitter (Web2.0) among selected academic libraries from six Gulf countries namely: Kingdom of Saudi Arabia, United Arab Emirates, Qatar, Bahrain, Oman and Kuwait. The study was conducted in selected 101 Polytechnic library web sites from the gulf countries. Out of the 101, 48 (48%) of them are public institutions and 53 (52%) of them are private institutions. Out of the 4 social media tools selected, RSS (16%) was the most popular while Facebook (11%) and Twitter (10%) follow closely behind. Blogs were rarely implemented by the selected Gulf library web sites.

However, it can be noted that 42% of the Polytechnics had link that points back to their Polytechnic Facebook account, followed closely by Twitter (37%) and RSS (4%). Blogs was the lowest used social media tool. A comparison of the six countries revealed that 80% of libraries in Qatar and 78% of libraries in United Arab Emirates have implemented at least 1 of the 4 social media tools. The usage of these social media tools was not widespread among the remaining four gulf countries: 52% in Saudi Arabia, 50% in Bahrain, 36% in Oman and 33% in Kuwait. The two studies are related in that the both are on use of libraries and were carried out in academic libraries.

The study by Amuda and Adeyinka (2017) revealed that majority (64.2%) of the library staff used Facebook followed by Twitter (39.6%), 25.7% of them had not adopted any of the social media services. The adoption of Facebook and twitter might be as a result of their being widely used by the library users. Percentage of the library staff that have adopted social media such as Blog, YouTube, LinkedIn, Delicious, MySpace, Others, Flickr are 18.1, 14.7, 12.8, 10.6, 14.2, 10.8, and 4.5%, respectively. The findings of this study revealed that social media is very crucial in services delivery

in academic libraries. Social media like Facebook, Twitter, Blog, YouTube, LinkedIn, Delicious, MySpace and Flickr are being used by the selected library staff, however Facebook was found to be the most used site. The study relates to the present study in that both studies are on use of library and also made use of questionnaire and interview in collecting data.

The study conducted by Azubuike and Adeyoyin, (2013) also revealed on the level of use of Social mediatechnologies by Library and Information Professionals in South Western Nigeria that Instant messaging and Social networking sites- Facebook, Twitter, Hi5, LinkedIn got the highest use acceptance rate of 200 (88.9%) and 189 (84.0%) respectively. While the above result indicates that the level of use of Social mediatechnologies by the respondents is of high proportion the outcome of the result on the frequency of use of these Technologies revealed that Instant messaging received the highest daily use acceptance response by having 207(92.0%) respondents while Wikis had the lowest daily use acceptance response by having 103 (45.8%) respondents. Wikis had the highest weekly use acceptance response by having 99 (44.0%) respondents while Instant messaging got the lowest weekly use acceptance response by having 10 (4.4%) respondents. Podcast, webcast and vodcast had the highest monthly use acceptance response with 41 (18.2%) respondents while instant messaging had the low Central monthly use acceptance response by having 5 (2.2%) respondents. The study is related to the present study in that both studies are on social mediatechnologies.

Research Methodology

Descriptive survey research design. Survey research method was also necessary for the study because data was collected and used to describe and interpret issues onmobile Apps services and Social mediaenvironment.The target population of the study was one fifty-six thousand four hundred and forty-six (56,456). This consisted of fifty sixteen thousand, four hundred and forty-four (56, 444) Polytechnic students, six (6) Polytechnic librarians and six (6) heads of system/ICT units. Sample size for the study was 299 Polytechnic students. Stratified and judgmental sampling techniques were used to sample the population for the study. Sample size for the study was 389 Polytechnic students. Stratified and judgmental sampling techniques were used to sample the population for the study. A closed ended questionnaire titled “Mobile Apps, and Social mediaas Use of Polytechnic Libraries in NorthCentral Nigeria (MASMUPL) was used. Statistical methods were used in analysing data collected were descriptive and inferential statistics.

Results and Discussion

The result of data collected from the field and their discussion. A total of two hundred and seventy-five (275) copies of the questionnaire were administered to the Polytechnic students in The Federal Polytechnic Nasarawa, the Federal Polytechnic Bida, the Federal Polytechnic Iddah, and the Federal Polytechnic Offa, out of which twohundred and thirty-two (232) copies were filled and returned representing 84%.

Table 1, it is revealed that 48 (17%) copies of the questionnaire were retrieved from the Federal Polytechnic Nasarawa, 77 (28%), from Bida Polytechnic, 36 (13%) fromthe Federal Polytechnic Iddah and 71 (26%) from the Federal Polytechnic Offa. An aggregate response rate of 232 (84%) was obtained.

Table 1. Response Rate

S/No	Polytechnics	No of Administered Questionnaire	No of Returned Questionnaire	Percentages (%)
1	The Federal Polytechnic Nasarawa	55	48	17%
2	Bida Polytechnic	91	77	28%
3	The Federal Polytechnic Iddah	40	36	13%
4	The Federal Polytechnic Offa	89	71	26%
Total		275	236	84%

Table 2: Classification of Respondents by Gender

Gender	Frequency	Percentages %
Male	145	63
Female	87	38
Total	232	100%

Table 2 indicates that 145 (63%) of the respondents were males, while 87 (38%) were females.

Table 3: Classification of Respondents Based on ICT Skills

ICT Skills	Frequency	Percentages %
Yes	197	85
No	35	15
Total	326	100%

Table 3 indicates that 197 (85%) of the respondents had ICT skills, while 35 (15%) did not have ICT Skills.

Table 4: Availability of Social media Tools and Mobile Apps Services in the Studied Institutions

S/NO	SOCIAL MEDIATOOLS	NASRAWA	BIDA	IDDAH	OFFA	TOTAL
1	Blogs	√	√	-	√	3
2	Instant messaging	√	-	√	-	2
3	Podcast	√	-	-	-	1
4	Facebook	√	√	√	√	4
5	Youtube	√	-	-	-	1
6	Twitter	√	-	-	√	2
7	Social bookmarking	√	√	-	-	2
8	Wikis	√	-	-	-	1
9	Linked-In	√	√	-	√	3
10	Mashups	√	-	-	-	1
11	Really Simple Syndication (RSS)	√	-	-	-	1
12	Online Forum	√	√	√	-	3
13	Flickr	√	-	-	√	2
TOTAL		13	5	3	5	26

Key: √= Available, - = Not Available

Table 4. reveals that Blogs were available in The Federal Polytechnic Nasarawa (NASARAWA), The Federal Polytechnic Bida (BIDA) and The Federal Polytechnic Offa (OFFA); Instant Messaging were available in NASARAWA and IDDAH; Podcast was available only in NASARAWA, Facebook was available in NASARAWA, BIDA, IDDAH and OFFA, YouTube was available only in NASARAWA. Twitter was available in NASARAWA and OFFA; social bookmarking was available in NASARAWA and BIDA, while Wikis were available only in NASARAWA. Linked-In was available in NASARAWA, BIDA and OFFA, Mashups and Really Simple Syndicate were available only in NASARAWA, Online Forum was available in NASARAWA, BIDA and IDDAH and Flickr was available only in NASARAWA alone.

Summarily from Table 4. the Federal Polytechnic Nasarawa had all the 13 social mediatoools studied followed by the Federal Polytechnic Bida and the Federal Polytechnic Offa that had five (5) each and in the Federal Polytechnic Iddah only three of the items were available.

Table 5: Mobile Apps Services Available in the Studied Institutions' Libraries

S/NO	Mobile Technology Services	NASARAWA	BIDA	IDDAH	OFFA	TOTAL
1	Text messaging services	√	√	√	√	4
2	Mobile App for sites	√	-	-	-	1
3	Mobile OPAC services	√	√	-	-	2
4	Notification of Library instructional materials via mobile phones	√	-	√	-	2
5	New title preview and reservation services	√	-	√	√	3
6	Current Awareness Services	√	√	√	√	4
7	Document delivery services	√	-	√	√	3
8	Online list of new arrival services	√	√	-	-	2
9	Email sending and receiving services	√	√	√	√	4
10	Frequently Asked Question (FAQ) services	√	√	-	√	3
TOTAL		10	6	6	6	28

Key: √ = Available, - = Not Available

Table 5. indicates that text messaging services is available only in NASARAWA, BIDA, IDDAH and OFFA, Mobile App for sites was available only in NASARAWA, Mobile OPAC services was available in NASARAWA and BIDA, Notification of Library Instructional Materials via mobile phones was available in NASARAWA and IDDAH, New Title Preview and Reservation Services was available in NASARAWA, IDDAH and OFFA, Current Awareness Services was available in NASARAWA, BIDA, IDDAH and OFFA, Document Delivery Services was available in NASARAWA, IDDAH and OFFA, online list of new arrival services was available in NASARAWA and BIDA, Email Sending and Receiving Services was available in NASARAWA, BIDA, IDDAH and OFFA and Frequently Asked Question (FAQ) Services was available in NASARAWA, BIDA and OFFA.

Summarily from Table 5 the Federal Polytechnic Nasarawa had all the 10 mobile Apps services while the Federal Polytechnic Bida, the Federal Polytechnic Offa and the Federal Polytechnic Iddah had six of the studied items each.

Level of Usage of Social media Tools and Mobile Apps Services in Polytechnic Libraries Studied

The respondents were asked to indicate the level of usage of Social media tools and mobile Apps services in the Polytechnic libraries studied. Table 6 provides the following responses:

Table 6: Level of Usage of Social media Tools and Mobile Technology Services

S/NO	ITEMS	NASRAWA		BIDA		IDDAH		OFFA	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
1	Blogs	3.06	0.563	2.40	0.10			2.96	0.46
2	Instant messaging	2.90	0.40			1.63	0.87		
3	Podcast	2.52	0.02						
4	Facebook	3.46	0.96	2.57	0.07	2.27	0.23	2.73	0.23
5	Youtube	2.44	0.063						
6	Twitter	2.71	0.21					2.82	0.32
7	Social bookmarking	2.10	0.40	2.55	0.05				
8	Wikis	2.65	0.15						
9	Linked-In	1.90	0.60	2.34	0.16			2.17	0.33
10	Mashups	2.29	0.21						
11	Really Simple Syndication (RSS)	2.35	0.15						
12	Online Forum	2.75	0.25	2.48	0.02	1.67	0.83		
13	Flickr	1.79	0.71					1.86	0.64
14	Text messaging services	3.02	0.52	2.97	0.48	2.13	0.37	2.68	0.18
15	Mobile App for sites	2.44	0.06						
16	Mobile OPAC services	2.50	0.00	2.2	0.30				
17	Notification of Library instructional materials via mobile phones	2.67	0.17			1.90	0.60		
18	New title preview and reservation services	2.04	0.46			1.69	0.81	2.22	0.28
19	Current Awareness Services	2.44	0.06	2.59	0.09	1.71	0.79	2.67	0.17
20	Document delivery services	1.79	0.71			1.46	1.04	1.76	0.74
21	Online list of new arrival services	2.19	0.31	2.19	0.31				

22	Email sending and receiving services	3.02	0.52	2.74	0.24	2.06	0.44	2.76	0.26
23	Frequently Asked Question (FAQ) services	2.35	0.15	2.36	0.14			2.23	0.27
Weighted Mean		2.57		2.51		1.87		2.55	
Overall Weighted Mean				2.38					

Table 6: reveals that responses from the Federal Polytechnic Nasarawa indicated that out of the twenty-three items listed on the use of social mediatoools and mobile Apps services, eleven had high mean scores which were above the 2.5 bench mark on a four-point Likert scale. These items included item 1: Blogs (\bar{X} = 3.06, SD=0.56); item 2:Instant messaging item (\bar{X} = 2.89, SD = 0.39); item3: Podcast (\bar{X} = 2.52, SD = 0.02); item 4: Facebook (\bar{X} = 3.45, SD = 0.95); item 6: Twitter (\bar{X} = 2.70, SD = 0.20); item 8: Wikis (\bar{X} = 2.65, SD = 0.15); item 12: Online Forum(\bar{X} =2.75, SD = 0.25); item 14: Text messaging services (\bar{X} =3.02, SD = 0.52); item 16: Mobile OPAC services (\bar{X} =2.5, SD = 0); item 17:Notification of Library instructional materials via mobile phones (\bar{X} = 2.67, SD = 0.17) and item 22: Email sending and receiving services (\bar{X} =3.02, SD = 0.52). All the other items produced a mean value below 2.5 indicating that the respondents rarely used, or visited, the library to utilise these facilities, showing they were not facilitators of Polytechnic students' use of libraries. These items are 5: Youtube: (\bar{X} =2.44, StD = 0.06); 7: Social bookmaking (\bar{X} =2.10, StD = 0.40); 9: Linked-In (\bar{X} =1.90, StD = 0.60); 10: Mashups (\bar{X} =2.29, StD = 0.21); 11:Really Simple Syndication (\bar{X} =3.35, StD = 0.15); 13: Flickr (\bar{X} =1.79, StD = 0.71); 15: Mobile App for site (\bar{X} =2.44, StD = 0.06); 18: New title preview and reservation services (\bar{X} =2.04, StD = 0.46); 19:Current Awareness Service (\bar{X} =2.44, StD = 0.06); 20: (\bar{X} =1.79, StD = 0.71); 21: Online list of new arrival services (\bar{X} =1.79, StD = 0.71) and 23: Frequently Asked Questions (FAQ) Services (\bar{X} =2.35, StD = 0.15). On the whole, the weighted mean of 2.57 was obtained, indicating that mobile Apps and web2.0 tools had high ability to facilitate the students of the Federal Polytechnic Nasarawa use of their Polytechnic library.

Furthermore, Table 6: responses from the Federal Polytechnic Bida show that out of the twenty-three items listed on the use of social mediatoools and mobile Appsservices, eleven of the items were available in their Library and five had high mean scores which are above the 2.5 bench mark on a four-point Likert Scale. These items include item 4: Facebook (\bar{X} =2.57, SD = 0.07); item 7: Social bookmarking (\bar{X} = 2.55, SD = 0.05) item 14: Text messaging services (\bar{X} =2.97, SD = 0.47); item 16: Current Awareness Services (\bar{X} =2.59, SD = 0.09) and item 22: Email sending and receiving services (\bar{X} =2.74, SD = 0.24). All the other items produced a mean value below 2.5 indicating that they barely facilitated the respondents' use or visit to the library. These items were 1: Blogs (\bar{X} =2.40, StD = 0.10), 9: Linked-In (\bar{X} =2.34, StD = 0.16), 12: Online Forum (\bar{X} =2.48, StD = 0.02), 16: Mobile OPAC Services (\bar{X} =2.20, StD = 0.30); 21: Online list of new arrival services (\bar{X} =2.19, StD = 0.31) and 23: Frequently Asked Questions (FAQ) Services (\bar{X} =2.36, StD = 0.14). On the whole, the weighted mean of 2.51 was obtained and this high mean showed that the students of the Federal

Polytechnic Bida had a high level of use of social mediatools and mobile Apps services which invariably facilitate their use of library.

Similarly, from Table 6 the respondents revealed that from IDDAH out of the twenty-three items listed on the use of social mediatools and mobile Apps services, only nine of the items were available and all of these had a mean score which is lower than the 2.5 bench mark on a four-point Likert Scale. A weighted mean of 1.87 was obtained which indicated that social mediatools and mobile Apps services did not facilitated the students' use of the library in IDDAH.

The responses from theFederal Polytechnic Offa show in Table 6 that out of the twenty three items listed on the use of social mediatools and mobile Appsservices, eleven of the items were available in the PolytechnicLibrary of which seven had high mean scores which are above the 2.5 bench mark on a four point Likert Scale. These items included, item 1: Blogs (\bar{X} =2.96, SD=0.46); item 4: Facebook (\bar{X} =2.73, SD = 0.23); item 6: Twitter (\bar{X} = 2.82, SD = 0.32); item 14: Text messaging services (\bar{X} =2.68, SD = 0.18); item 19: Current Awareness Services (\bar{X} =2.67, SD = 0.17) and item 22: Email sending and receiving services (\bar{X} =2.76, SD = 0.26). All the other items produced a mean value below 2.5 indicating that the respondents were rarely attracted to use or visit the library because of these items. These items are 9: Linked-In (\bar{X} =2.17, SD = 0.33); 13: Flickr (\bar{X} =1.86, SD = 0.64); 20: Document Delivery Services (\bar{X} =1.76, SD = 0.74); and 23: Frequently Asked Question (FAQ) Services (\bar{X} =2.23, SD = 0.27). On the whole, the weighted mean of 2.55 is high, revealing that the use of social mediaand mobile Apps by the students of the Federal Polytechnic Offa facilitated their library use.

Summary of Major Findings

The major findings of the study are as follows:

1. There were social mediatools and mobile Apps services in the studied Polytechnics. Some of them are available in some and absent in others.
2. There were more social mediatools and mobile Apps services in the Federal Polytechnic Nasarawa than,the Federal Polytechnic Bida, the Federal Polytechnic Iddahand The Federal Polytechnic Offa. Therefore, these facilities were used more in the Federal Polytechnic Nasarawa than the other Polytechnics studied.
3. Blogs, Facebook, text messaging and e-mail sending and receiving were the most used social mediatools and mobile Apps services by Polytechnic students in Polytechnic libraries in NorthCentral Nigeria.
4. Despite the availability of some of social mediatools and mobile Apps services in the studied Polytechnics, there was low utilisation of these facilities.

Discussion of the Findings

This section discussed the major findings of the research as follows:

Demographic information

The study revealed that the highest number of the respondents in the studied Polytechnics were from the Federal Polytechnic Bida (Table 1). This could be attributed to the fact that one of the chosen faculties in the Federal Polytechnic Bida had a high population more than the data collected from the other Polytechnics. This is probably because the Federal Polytechnic Bida is having most of the courses offered all the polytechnics. Gender distributions of the respondents in the four Polytechnics studied showed that males are higher in number than the female (Table 2). This could be because two of the studied Polytechnics are special oriented Polytechnics (technology and agriculture) where male students have more interest than the female students. And finally, the study revealed that 85% of the respondents were ICT compliant (Table 3). This could be attributed to the various computer-based examinations that most students undergo before they gain admission into higher institutions and even before and after gaining admission most people today are exposed to micro-computers and smartphones use for sending and receiving.

Research question 1: Availability of social media tools and mobile Apps services in Polytechnic libraries in North-Central Nigeria

The result of the analysis on the availability of social media tools and mobile Apps services showed that out of the four thePolytechnic libraries studied in NorthCentral Nigeria, only the Federal Polytechnic Nasarawa had all the twenty three items listed for the study followed by the Federal Polytechnic Bidaand the Federal Polytechnic Offa that had eleven of the listed items and the Federal Polytechnic Iddah which had nine items listed for the study (Table 5 and 6). These revealed that despite the new avenues that social media tools and mobile Apps services avail for effective service delivery to students, there was low availability of these facilities in some of the studied Polytechnic libraries.

It could also be deduced that the Federal Polytechnic Nasarawa had more social media tools and mobile Apps services than all the studied Polytechnics. This was probably because of the institution's dedication to achieve an age-old mandate of becoming a library 2.0 that would not only exemplify a change in technology but also engineer a paradigm shift towards user-centricity and participation. The interview results with the heads of ICT units showed three of the studied Polytechnics with limited facilities were at the verge of launching some of these facilities, while presently the services were available to only the staff and the remaining two attributed the none availability of the tools and services to poor funding. However, the above findings are similar to that of Okonedo, Azubuike and Adeyoyin (2013) who revealed in their examination of the awareness and use of social media technologies by library and information professionals in selected libraries in NorthCentral Nigeria that, the types of Social media technologies available in the studied institutions are used are Blogs, Wikis, social networking tools such as Facebook, Twitter, Hi5 and LinkedIn).

Research question 2: Level of usage of mobile Apps services and social mediainPolytechnic libraries studied.

The study revealed that although the Federal Polytechnic Nasarawa had all the listed facilities studied, some of them were still underutilised. Mobile tools and services such as blogs, Facebook,

text messaging and e-mail sending and receiving services were the most used of all the available social media tools and mobile Apps services (Table 6). It was observed that some students were not aware of the availability of these facilities in the library and some other students did not use the Polytechnic library where these facilities were resident but rather used their various schools' libraries and departmental libraries for their academic work. In the Federal Polytechnic Bida, text messaging, e-mail services, current awareness services and Facebook have great usage (Table 6), the interview exercise revealed that the respondents were not aware of the availability of social media tools and mobile Apps services and some of them rarely used the Polytechnic library but rather used the reading rooms available in their faculties. Similarly, in the Polytechnic of Iddah there was a gross low usage of the few available social media tools and mobile Apps services, Oral interview with respondents in Polytechnic of Offa revealed that they were not aware of the existence of these facilities and even when they visited the e-library to make use of the resources they were usually allowed to use only google.com. This restriction, no doubt, would not permit the students to have the opportunity and explore the resources in the library. Similarly, the study also revealed that in the Federal Polytechnic Offa, Linked-in, new title preview and reservation services, document delivery services and FAQs were underutilised.

Generally, it was observed that blogs, Facebook, text messaging services and e-mail sending and receiving services were the mostly used social media tools and mobile Apps services, indicating that there is a low use of social media tools and mobile Apps services in the four federal Polytechnics studied. This is probably because students were not adequately informed about the available facilities in the library, some of the facilities that would have attracted high usage were not available. This finding is similar to that of Mpoeleng, Totolo and Jibril (2015) who showed that the most frequently used tools were Facebook and Google Scholar. While wikis, Twitter, podcasts, blogs and LinkedIn were not very popularly use amongst the librarians. Also, Okite-Amughoro (2017) revealed that podcast, social bookmarking and twitter are not frequently used by students in selected Polytechnics in North Central Nigeria. Furthermore, Anuobi and Ogbonna (2012) attributed low use of social media tools and mobile Apps to students not being familiar with social media tools, restricted opportunity for use, low skills and lack of needed facilities.

Conclusion

Based on the findings of the study, it could be concluded that mobile Apps and social media were facilitators of Polytechnic students' use of libraries. Though there were available social media tools and mobile Apps services in the four Polytechnics studied but it was only the Federal Polytechnic Nasarawa that had 100% of the social media tools and mobile Apps services investigated, the Federal Polytechnic Bida and the Federal Polytechnic Offa had 48% each, while the Federal Polytechnic Iddah had 39%. Thus, low utilisation of social media tools and mobile Apps services by Polytechnic students in the Polytechnics studied was in existence. It is therefore, imperative for the Federal Polytechnic libraries in North Central Nigeria to provide adequate social media tools and mobile Apps services, and awareness of these facilities to students and training programmes to improve the staff knowledge. Once these facilities and services are adequately taken care of in these libraries, it is expected that the use of these facilitators to enhance the use of the library among the

Polytechnic students in the Federal Polytechnics in NorthCentral Nigeria would experience a substantialincrease.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The managements of Polytechnic libraries studied should provide sufficient social mediatools, mobile Apps services, develop in-house mobile Apps for the library and dedicated library websites. When a library has these facilities in place, it would attract users' attention. Also, the library would be able to provide more effective service delivery in this global age with international best practices.
2. The managements of Polytechnic libraries studied should organise sensitisation programmes on the availability of social mediatools and mobile Apps services for Polytechnic students in thePolytechnics in North Central Nigeria. This would increase awareness of the available facilities in the Polytechnic libraries which would increase their use in the library.
3. The library managements in conjunction with school management of Polytechnics studied should provide mobile Apps for all students at a subsidised rate so that the students can effectively make use of the social mediaand mobile Apps services available. When these measures are taken, there will be an increase in the utilisation of social mediatools and mobile Apps services.
4. The Library managements of the Polytechnics studied should organise on the job training programmes for the library staff in order to improve their technical skills and meet with the increasing demands of the information age users of the library.

Reference

- Abubakar, D., &Chollom, K. (2017). Relationship of user education, computer literacy and information and communication technology accessibility and use of e-resources by postgraduate students in Nigerian university libraries. *Library Philosophy & Practice*.
- Acheampong, E., & Agyemang, F. G. (2021). Enhancing academic library services provision in the distance learning environment with mobile technologies. *The Journal of Academic Librarianship*, 47(1), 102279.
- Akwang, N. E. (2021). A study of librarians' perceptions and adoption of Web 2.0 technologies in academic libraries in Akwa Ibom State, Nigeria. *The Journal of Academic Librarianship*, 47(2), 102299.
- Alhabash, S., & Ma, M. (2017). A tale of four platforms: Motivations and uses of Facebook, Twitter, Instagram, and Snapchat among college students? *Social media+ society*, 3(1), 2056305117691544.
- Almeida, V., Furtado, E. S., & Furtado, V. (2020). Personal Digital Assistants: The Need for Governance. *IEEE Internet Computing*, 24(6), 59-64.
- Al-Qallaf, C. L., &Ridha, A. (2019). A comprehensive analysis of academic library websites: design, navigation, content, services, and web 2.0 tools. *International Information & Library Review*, 51(2), 93-106.
- Amuda, H. O., & Adeyinka, T. (2017). Application of social media for innovative library services in South-Western Nigerian University Libraries. *Journal of Balkan Libraries Union*, 5(2), 10-16.
- Bikos, G., & Papadimitriou, P. (2018). Mobile libraries: defining the phenomenon. *International Journal of Library and Information Science*, 10(3), 35-40.
- Devi, R., & Keshava, J. (2021). E-Resources: Perception and Use by Ayurvedic Medical College Library Users of North Karnataka. *Journal of Indian Library Association*, 56(1), 32-42.
- Dhungana, A., &Bulut, E. (2020). Peer-to-peer energy sharing in mobile networks: Applications, challenges, and open problems. *Ad Hoc Networks*, 97, 102029.
- Hamad, F., Farajat, S., &Hamarsha, A. (2018). Awareness and adoption of mobile technologies in the delivery of services in academic libraries in Jordan. *Global Knowledge, Memory and Communication*.
- Heflin, H., Shewmaker, J., & Nguyen, J. (2017). Impact of mobile technology on student attitudes, engagement, and learning. *Computers & Education*, 107, 91-99.
- Isaac, U. E. (2019). Availability of Library Aesthetics for Enhanced Educational Purpose of Library Patronage by Users in Federal University Libraries in South East, Nigeria.
- Kari, H. K. (2020). Libraries and Mobile Technologies: An Assessment of the Deployment of Mobile Technologies in Libraries of Nigeria. *Skhid*, 165(1).

- Kompen, R. T., Edirisingha, P., Canaletta, X., Alsina, M., & Monguet, J. M. (2019). Personal learning Environments based on Web 2.0 services in higher education. *Telematics and informatics*, 38, 194-206.
- Lee, C. C. E., Leow, S. W. Y., & Kong, X. J. (2020). The use of mobile technologies for learning in higher education: Students' readiness. *SEARCH Journal of Media and Communication Research*, 107-127.
- Maideen, S. (2017). Mobile Technologies for Academic Libraries: An Overview. *Emerging Trends in Library and Information Science*, 124-129.
- Mansouri, A., & Asl, N. S. (2019). Assessing mobile application components in providing library services. *The Electronic Library*.
- Margam, M., & Dar, S. A. (2017). Mobile information services and initiatives in university libraries: a new way of delivering information. *DESIDOC Journal of Library & Information Technology*, 37(2), 109.
- Mishra, A. S., Jha, J. K., & Umre, S. K. (2017). Mobile app and the library services. *International Journal of Information Library and Society*, 6(2), 27-32.
- Okonedo, S., Azubuikwe, F. C., & Adeyoyin, S. O. (2013). A Survey of the awareness and use of Web 2.0 technologies by library and information professionals in selected libraries in south west Nigeria. *International Journal of Library Science*, 2(4), 61-68.
- Oni, O., Momoh, A. U., & Amugo, J. E. (2018). Application of web 2.0 tools for the provision of library services for teaching, learning and research in Polytechnics. *Journal of Pedagogical Research*, 2(3), 203-211.
- Oyedokun, T. T., Oyewumi, F. A., & Laaro, D. M. (2018). Perception and Attitude of Library and Information Science Professionals towards Knowledge Management: A Survey of Certified Librarians in Nigeria. *Library Philosophy & Practice*.
- Roy, M. B., & Kumar, N. (2017). Application of mobile technology in Library services. *International Journal Information Movement*, 2(7), 168-172.
- Saka, K. A., Babalola, G. A., Ahmed, A. O., & Mohammed, A. A. (2020). Influence of Preservation Techniques and Access to Digital Resources on Research Outputs of Academic Staff in Federal University Libraries in Northern Nigeria. *Library Philosophy and Practice*, 1-41.
- Sewell, C., & Kingsley, D. (2017). Developing the 21st century academic librarian: The Research Support Ambassador Programme. *New Review of Academic Librarianship*, 23(2-3), 148-158.
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273-1296.
- Uche Ph D, A. C., & Udo-Anyanwu Ph D, A. J. (2019). Awareness and Utilization of Social Media by Tertiary Institutions' Librarians in Abia and Imo States, Nigeria.
- Yebowaah, F. A., & Plockey, F. D. D. (2017). Awareness and Use of Electronic Resources in University Libraries: A Case Study of University for Development Studies Library. *Library Philosophy & Practice*.