Staff Internet Access Subscription Pattern in Selected Tertiary Institutions in Delta State, Nigeria

Benson Oghenevwogaga ADOGBEJI[1] & Lucky, Oji AKPOJOTOR[2]
Federal University of Petroleum Resources, Effurun[1,2]
benadogbeji@gmail.com[1], akpojotor.lucky@fupre.edu.ng

Abstract

***Purpose**: The general purpose of this research is to investigate Internet access subscription pattern of the staff of four tertiary institutions in Delta State. These include the Federal University of Petroleum Resources, Effurun; Delta State University, Abraka; Petroleum Training Institute, Effurun and College of Education, Warri. The specific objectives of this research is to determine the means through which the staff access the Internet, to investigate the subscription pattern, to identify the type of data bundle plans adopted by the staff irrespective of the category of staff, either teaching or non-teaching staff.*

***Design/Method/Approach**: Random sampling was used to select 200 staff that filled the instrument. Questionnaire was designed in line with objectives which were used as instrument to gather the data. The analyzed data was presented in tables and charts.*

***Findings**: The research revealed that 140(70%) out of the 200 staff used have personal laptop/desktop computers while 60(30%) do not have their personal laptop but they used their office laptop/desktop to access the Internet. The research pointed out that both teaching and non-teaching staff make used of MTN, GLO, Airtel, Etisalat, visaphone, starcoms network and modem among others to access the Internet. It also discovered that the data bundle plan varies from individual staff to another. Nevertheless, majority of the staff used the hourly/daily subscription plan while some used 3GB, 200MB, 100MB data bundle plan among others.*

***Implication**: The study ascertained that Internet subscription pattern of tertiary institutions varies from one individual to another. The researcher therefore recommends that tertiary institutions staff, secondary and primary school teachers should be encouraged further to make use of the Internet. This could be made easy through financial support via soft loan in acquiring personal laptop and through research grant or allowance that will enable the staff subscribe to the net and purchase data bundles with ease. This on a long run will influence researchers positively, which would bring about better, positive and high intellectual attainment which in turn will help to erase negativity and enthrone positive thinking that will bring greatness to nations especially Nigeria.*

***Originality/Value**: This study is virtually a new research that addresses the Internet access subscription pattern of tertiary institutions staff.*

***Keywords:** Internet, cybercafés, subscription, E-Library, network provider, modem, Nigeria*

***Paper type:** Empirical*

Introduction:

The role of Internet has become so great in the society that virtually every human being wants to know and access what is happening in the whole world. The Internet could be described as series of interconnected networks surrounded by millions of computers which allow communication of data worldwide. It can still be defined as a global communication network that allows computers worldwide to connect and exchange information. Similarly the Internet can also be described as a worldwide system of computer network, a network of networks in which users at any one computer far or near can get information from any other computer either far or near too. The Internet being a global village, every individual tries to gain access to it, this they do using different means of Internet connectivity. Some staff of tertiary institutions use their school wired or wireless network while some make use of MODEM (Modulator / Demodulator). A MODEM is electronic device that converts digital signals at the sending end to analogue signals and then reconvert the analogue signal back to digital signals which the computer at the receiving end can understand. This device is used by subscribers

using a specific bundle plan that enable them have access to the Internet. In most cases, the reasons for the access to the net are majorly for research, which entails sending of research questionnaire among others. In this regard, this quest to conduct research becomes so pressing and imperative that every researcher wish to be involved and the quickest means to get information from the e-resources in the recent time is mainly through the Internet. Access to the Internet is either through institutional Internet connections on one hand or through the individual effort of subscribing to the Internet via any of the network providers using modem on the other hand. The essence of the use of the Internet in this respect is mainly to have quick access to e-resources which is made possible through the electronic library powered by the Internet. Nevertheless, university staffers tend to use other alternatives to access the Internet when there is no institutional subscription or there is a breakdown of the connectivity. The figure below is a picture of modem used by network provider for Internet access.

Figure 1: Modem

Source: http://www.nairaland.com/1491180/wireless-networking-products-build-optimize, http://en.wikipedia.org/wiki/

At this point, one could then say, that the university staff end up purchasing other devices that enable them have access to the Internet. In this regard, they consent to the to use of mobile and wireless technologies such as 3G Internet modem (IM) as showed in figure 1 above, mobile phones (MP), smart phones like blackberry (BB) and other mobile devices which have been identified as alternative wireless access to the Internet irrespective of time and location. Nkomo & Mugwisi (2010) posits that mobile devices include laptops, netbooks, notebook computers, cell phones, audio players, cameras, and e-book readers, and they are used to perform various functions including Internet searching. Mobile devices (MD) have penetrated all spheres of human endeavour and their utilization has pervaded the university communities in the 21st century. These researchers reported further that while smartphone and cell phone with in-built modem can connect to the Internet directly, so also PCs and laptops could use a modem to connect to the Internet. Modem which is modulator / demodulator can be defined in this regard as the device that enable the digital signals of computer to be converted to analogue, thereafter reconverted to digital signal at the receiving end. Mittal, Gupta & Gupta (2010) defined a modem as an electronic device that provides a communication interface, connecting your home network to the Internet through an Internet Service Provider. This device is a modulator-demodulator instrument capable of encoding and decoding digital information that is sent and received, thus reproducing the original data. There are different types of modem – internal and external modem. The "third generation, 3G modem" is a common example used in Nigeria. Modems usually use SIM card to allow users connect to a network Obasuyi & Usifoh (2013). This study of these researchers addressed so much the connectivity via modem, Internet phone among others.

A 3G modem usually come as a plug-in device and it is plugged into a USB slot on a computer, and it closely resembles a portable memory or flash drive that is autorun. In Nigeria, major global systems of mobile communication (GSM) network operators such as (MTN, Globalcom, Etisalat, Starcom, etc.) have this facility. Another popular source of Internet access in Nigeria is the use of mobile phones (MP). This has become so prominent that everyone can access the Internet using their mobile phone which has made communication so easy in Nigeria and the entire world. MP (Mobile Phone) and BB (Black Berry) can be used to connect to the Internet directly or indirectly. In line with this view, Mittal, et al (2010) posits that smartphones can be used as a modem to connect your laptop or computer to the Internet so also is the WiFi and hotspot of other sophisticated phones such as Techno, Samsung among others can be used as means to access the Internet because of the inbuilt modem and

wireless features. To connect to a Wi-Fi LAN, a computer has to be equipped with a wireless network interface controller. The combination of computer and interface controller is called a *station*. All stations share a single radio frequency communication channel. Transmissions on this channel are received by all stations within range. Wi-Fi technology may be used to provide Internet access to devices that are within the range of a wireless network that is connected to the Internet. The coverage of one or more interconnected access points (*hotspots*) can extend from an area as small as a few rooms to as large as many square kilometres. Coverage in the larger area may require a group of access points with overlapping coverage. Hence most laptops, BB and MP can browse the Internet and subscription is based on recharging of the phone where data bundles are offer by the network provider Obasuyi & Usifoh (2013). In that case the data downloaded depends on the recharging of the phone. The more the data bundle subscribed to the more data (information resources) the subscriber can download from the net.

Review of Literature:

In view of this research on staff Internet access subscription pattern in selected tertiary institutions, the researcher therefore reviewed literature in some aspect of research relating to the topic. The literature review is subdivided into E-Library and e-resources, reasons for Internet access in research, challenges of using cybercafés for Internet access, limited access due to cybercafés closure and the subscription pattern of users.

E-Library and E-Resources:

It is nice therefore at this point to define an electronic library. To start with, an Electronic library can be defined as a library that consists of materials and services in electronic formats rather than the print format Aina (2004). In the same way Shim et al (2001) defined Electronic library as those electronic information resources and services that users access electronically via a computing network from inside the library or remotely outside the library. Electronic library resources are so paramount that they are regarded as invaluable research materials that complement print-based resources in any analogue library. Similarly electronic library helps to provide access to information that might be restricted to the user because of geographical location or finances (Sabouri, et al 2010). This implies that electronic library goes beyond a specific library physical location to render services to users. The existence of electronic resources in this regard has cut the barrier of access to valuable information resources which until now were difficult to access especially by scholars in the developing nations of the world. This is due to inability to get such resources as a result of distance. This emergence of the Internet and e-resources has increased tremendously the popularity of the electronic library and e-resources. The increase in the use of e-resources is attributed to the popularity of electronic resources which lies on its flexibility in searching than their paper-based counterpart. This is as a result of the fact that they can be accessed remotely at any time and from anywhere regardless of distance barriers. Tenopir (2003) in a major survey analyzed the findings of over 200 studies on the use of electronic resources in libraries that were published between 1995 and 2003. This study revealed that, electronic resources have been rapidly adopted in academic environment which has made research easy and interesting due to quick access to materials online.

Reasons for Internet in research and challenges of using cybercafés:

Previous studies carried out in this area of Internet access, cybercafés operations and their challenges showed that some students in Nigerian universities have been using the Internet in cyber café within or around their university environment. Ugah and Okafor (2008) conducted a research on faculty use of cyber café for internet access. The objectives of the study were to investigate the reasons for using the internet and problems associated with the use of the internet in cybercafé. The findings pointed out that 60 (50%) of the respondents were of the opinion that they used the internet /cybercafés for research purpose but no respondent accepted that it is used for entertainment.

Considering the reasons for using the Internet in an academic environment and beyond, a study by (Tiemo & Ubogu (2011) on cybercafés and academic activities in Nigerian university environment, revealed that 54(45%) respondents opined that they used Internet / cybercafés for educational purpose and 36(30%) accepted that

they used it for communication. While 66(55%) of them used it for e-mail services and 1(0.83%) used it for chatting. The research further pointed out that 24(20%) of the respondents agreed that they are fully satisfied with the Internet service at the cyber café 18(15%) agreed that they are partially satisfied with the services of the cyber café 48(40%) accepted they are not satisfied with the service of the cyber café within their academic environment. Among the problems affecting internet usage in the cybercafé was slow internet access speed. Considering the use of the Internet, Adetoro (2010) conducted a research on internet utilization and abuses in selected cyber café in Ogun State, Nigeria. Among the objectives of the study was to investigate the reasons for using the internet which is not differ from what other researcher have pointed out in their studies.

The literature reviewed so far showed that there are numerous reasons for using the Internet. The Adetoro (2010) research highlighted some of these reasons as stipulated in his work. In the first instance, the finding revealed that 651(85.1%) respondents accepted that they used it for checking and sending e-mail, 450 (58.8%) stated that they used it for chatting with friends, 346(45.2%) agreed that they used it for sporting and entertainment information, 276 (36.1%) accepted that they used it for downloading and listening of music and participating in news and group discussion had 209(27.3%) respondents. In this discovering there is no serious concern using for research by downloading e-resources which ought to be the major purpose of using the Internet in an academic environment. Similarly, Chachage (2001) conducted a research on internet cafés in Tanzania: a study of the knowledge and skills of end-users. The objectives of the study were to investigate reasons for using Internet; problems associated using the internet and impact of using the internet in cyber café. The finding showed that 45 (62%) of the respondents agreed that they used it to search for information on a specific subject, 49(67%) of them accepted that they used it for reading newspaper. 20(27%) accepted that they used it to search for information on behalf of someone else. The finding also revealed some of the problems encountered by internet users at the cyber café. This finding has so much relevance to the main purpose of Internet availability in the academic environment. It is really for serious searching of information resources that are not easily available in the local library which in turn enhance productivity in research, teaching and study.

Be it as it may, there is no doubt that there are no challenges in use of Internet; Chachage (2001) research discovered some problems. The main problem observed by 82% of the respondents was slow internet connectivity which results to wastage of user time in the cyber cafe. Another problem indicated by 78% of the respondents, was the internet café environment being too small with few computers for users. 30% of the respondents indicated that a common problem in internet café is electricity supply. 16 % of the respondents stated that lack of staff training is another problem, they specified that staff did not have the necessary ICT skills to support user when faced with problem browsing the net. 10% of them also indicated problems with internet café equipment, especially hardware Adomi (2005) conducted a study on the effect of price increase on cyber café services in Abraka, Nigeria. The study used a combination of techniques to collect data. Gitta & Ikoja-Odongo (2003) discovered that the application of the Internet in Uganda's cafes was also hampered by high charges to users. In addition Mutual (2003) was also able to identified lack of appropriate costing models as a problem facing the development of cyber cafes. In the same vein some scholars have identified high cost of services as a problem which affects the provision and use of Internet services in cyber cafes in different parts of Africa.

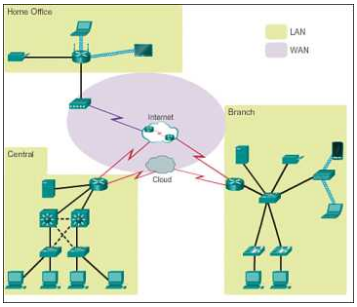
In a Similar development, Adomi, Omodeko and Otolo (2004) conducted a research on the use of cybercafé at Delta State University, Abraka, Nigeria. Among the objectives were to investigate the problems of using Internet in cyber cafes. 56(67.5%) of the respondents stated that high cost of service is the major problem confronting cyber café users. Erratic electricity supply is another problem for internet service in cybercafés, especially outside the major towns in Africa. Many countries have limited power distribution networks that do not penetrate significantly into rural areas, and power sharing (regular power outages for many hours) is very common, even in cities such as Accra, Dar es, Salaam & Lagos (Jensen, 2002). One of the major problems militating against cybercafés in Delta State, Nigeria is frequent electricity

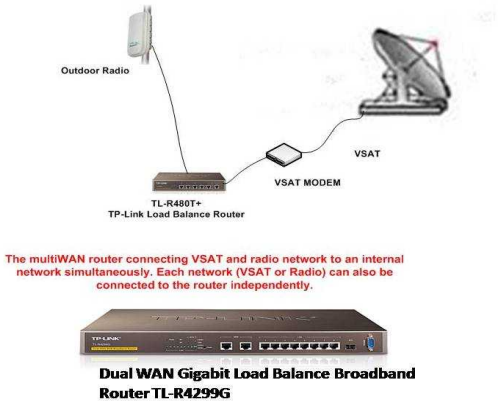
blackouts (Adomi, Okiy & Ruteyan, 2003). This problem forces café operators to acquire and mount stand-by electricity generating plants to stay in business and satisfy their users. Adomi, Okiy and Ruteyan (2003) found out that students ranked highest among users of cyber cafes in Nigeria followed by businessmen, lecturers and teachers. Similarly, a majority of the cybercafes users in surveys in Uganda (Gitta and Ikoja-Odongo, 2003) and Botswana (Sairosse & Mutula, 2004) were students. Thus the clients that patronize cyber cafes most were students, most of whom were financially dependent on their parents or guardians. Who could not afford Internet connection at home? The high cost of Internet services in cafes could therefore affect their internet use. In the same vein researchers equally tend to use alternative means rather than cybercafés to get access to the Internet.

Limited access due to cybercafés closure and the subscription pattern of users:

In recent time, it is observed that access of the Internet through the cybercafés has become difficult to the few of them in operations. This is not unconnected with the recent development where many cybercafés have closed down in many places due to some inherent challenges hence so many people especially the staff of tertiary institutions opt for the use of modem to augment their access to the Internet. A study recently conducted revealed some reasons for the closure of the cybercafés in the two towns surveyed in Delta State, Abraka and Asaba, which indicated that there were numerous reasons. However, some specific reasons discovered include high cost of services and connectivity, epileptic power supply, frequent loss of signals and low response from the ISP sometime when there is breakdown in connectivity. Other reasons for closure of the cybercafés were the fact that university campuses are in the two towns which make university students that frequently use cybercafés to change their mind to either use university digital centre and the fact that some people used external MODEM to connect Internet to their laptopAdogbeji&Mabi (2015). Here below a diagram of Wide Area Network (WAN) and a list of some wireless devices such as dual wired / wireless router which receive Internet signals and broadcast to both wired and wireless network, USB modem which is use external to have access to the Internet by individual subscribers.

Figure 2: Picture of LAN, WAN and Wired / Wireless Devices





Dual wired /wireless router **USB modem**

http://www.nairaland.com/1491180/wireless-networking-products-build-optimize, http://en.wikipedia.org/wiki/

The question at this point is that how do the staff subscribe to it. What subscription pattern do they adopt? What type of modem and network providers they use and what type of data bundle plan does the staff subscribe to?

Statement of the Problem:

In recent time the need to use the Internet has become so imperative that every mankind want to be updated which is made easy through access to the Internet. Nevertheless, it has been obvious that so many cybercafés have closed down due to some challenges such as high cost of subscription to Internet and bandwidth due to currency exchange rate, loss of signals due to heavy rain fall, inconsistency of electricity power supply and low patronage due to the option of using external MODEM and offer of network service by network providers like MTN, GLO, Etisalat among others Adogbeji & Mabi (2015). These challenges have propelled tertiary institutions staff to consent to the use of MODEM in gaining access to the Internet. In the same vein, literature review pointed out some main problems observed by 82% of the respondents of a research, was slow internet connectivity which results to wastage of user time in the cyber café as indicated by 78% of the respondents. Similarly another challenge identified was the internet café environment being too small with few computers for users. In the like manner 30% of the respondents indicated that a common problem in internet café is electricity supply Chachage (2001), (Adomi, Okiy & Ruteyan, 2003). This research therefore wishes to determine the Internet subscription pattern of tertiary institutions staff with the view to proffer suggestions that would benefit the tertiary institutions staff in particular and the society in general.

Objectives of the study: The general purpose of this research is to identify the Internet access subscription pattern of the staff of a Federal University, State University, Petroleum Training Institute and a college of education in Delta state, Nigeria. The essence of this is to investigate how the staffers have access to the Internet. However, the research has the following specific objectives.

1. To determine the means through which the staff access the Internet and to verify if the staff have personal desktop or laptop computer
2. To find out from the randomly selected staff the number that have access to the Internet and through which network subscription provider
3. To ascertain from the staff the type of MODEM they use to access the Internet
4. To identify the type of subscription data bundle plan they used
5. To determine the number of staff that has alternative sources of access to the Internet and the type of alternative.

Methodology:

The researcher sampled 200 staff whereby50 staff of each institution are randomly selected to fill a questionnaire that was used to gather data from each staff in each of the Institution regardless of category of staff, either academic or non-academic staff in the selected institutions. Whether federal, state, training institute or

college of education. The data gathered where then presented in tables and charts as indicated below.

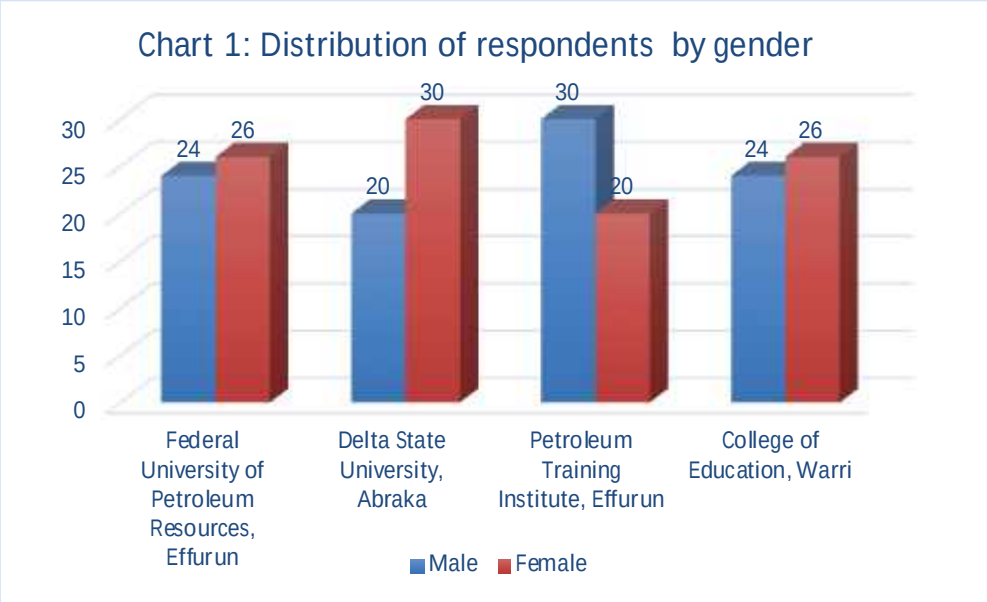
The Research Findings:

Table 1: Distribution of respondents according to Institution

S/N	Name of Institution	Number of Staff randomly selected
1	Federal University of Petroleum Resources, Effurun	50
2	Delta State University, Abraka	50
3	Petroleum Training Institute, Effurun	50
4	College of Education, Warri	50
	Total	**200**

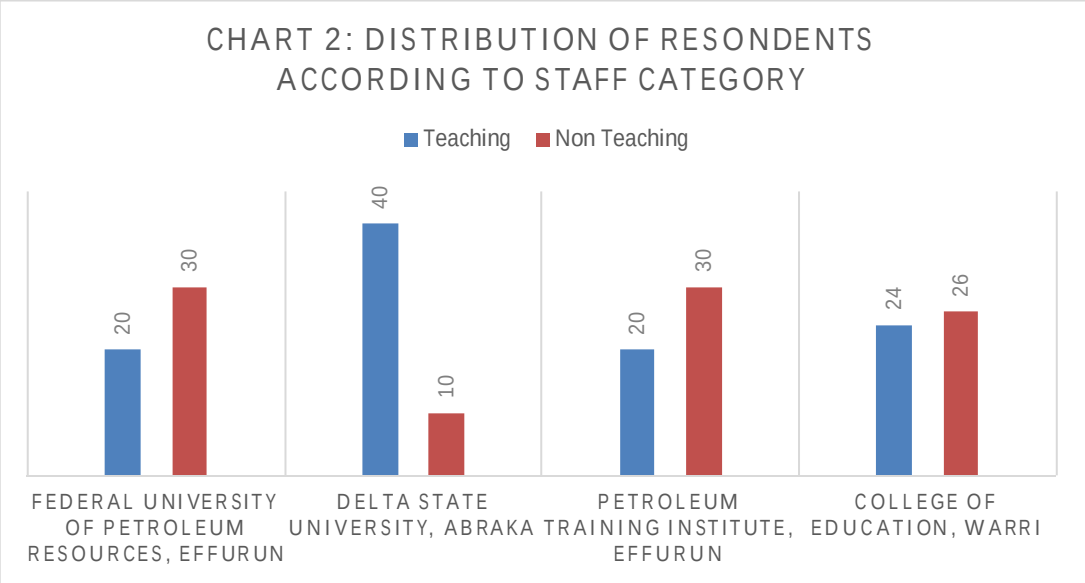
The Table 1 above showed the number of staff randomly selected for the study from each of the tertiary institution. A total of 200 staff were randomly asked to fill the questionnaire to determine the Internet access subscription patterns of the individual staff. At the Federal University of Petroleum Resources, 50 staff were selected. In the same manner, 50 staff of the Delta State University were equally randomly selected. Similarly, 50 staff of the Petroleum Training Institute, Effurun were also randomly chosen to fill the questionnaire while at the College of Education, Warri, 50 staff were also used. Therefore, a total of 200 staff of the four tertiary institutions were randomly selected and used for the study.

Distribution of respondents by gender



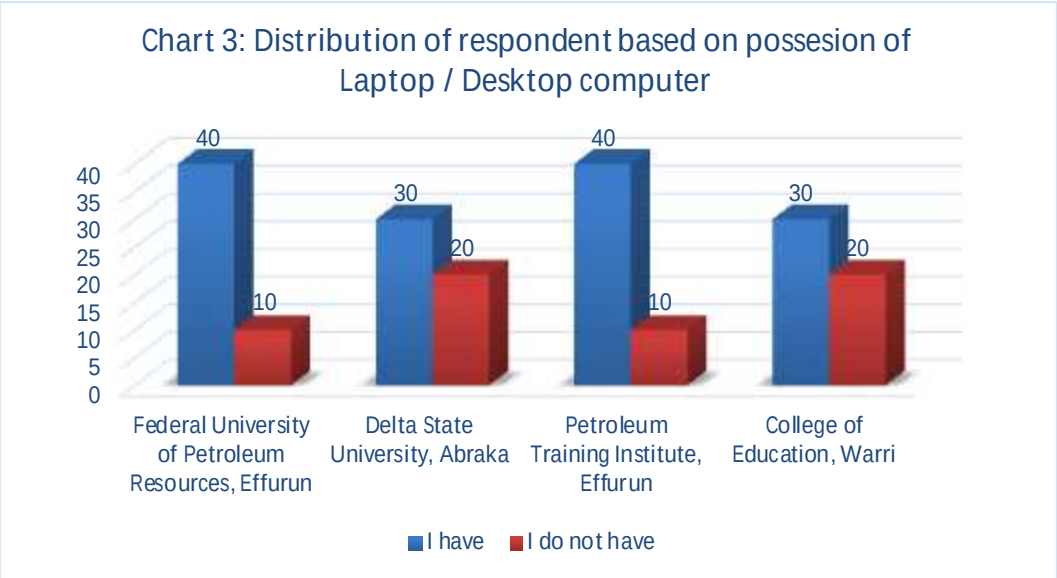
The Chart 1 above showed the distribution of the staff used according to gender. It revealed that a total of 98 (49%) male staff were used from the four institutions. Among the 98 male staff used for the research, a total of 24 were from the Federal University of Petroleum Resources, Effurun, 20 male from Delta State University, Abraka. In the same vein 30 male staff of the Petroleum Training Institute were randomly selected while 24 male were selected from College of Education, Warri. In the same development as revealed in the table 2, 102 (51%) female staff were also selected randomly from the four tertiary institutions for this research. Among the 102 female staff used, 26 were selected from the Federal University of Petroleum Resources, Effurun while 30 were randomly picked at the Delta State University, Abraka. Similarly, 20 female staff were chosen from the Petroleum Training institute, Effurun while 26 female staff of the college of Education, Warri were equally randomly selected. The essence of the random selection regardless of the department was to have an unbiased view of the staff.

Distribution of respondents according to staff category (academic and non-academic staff)



The research data were gathered from both academic (teaching) staff and non-academic (non-teaching) staff of the four used tertiary institutions. At the Federal University of Petroleum Resources, out of the 50 staff randomly selected 20 were teaching staff while 30 werenon-teaching staff. At the Delta State University 40 among the 50 selected were academic staff while 10 were non-teaching staff. In the same manner, 20 teaching staff of the Petroleum Training Institute and 30non-teaching staff were used while at the College of Education, Warri, 24 academic staff and 26non-teaching staff were randomly selected to fill the questionnaire of this research on staff internet access subscription pattern of the tertiary institutions used as indicated in the Chart 3 above.

Distribution of staff according to possession of desktop or laptop computers



The Chart 3 above revealed that in all 140 staff have personal laptop computer while 60 staff do not have personal laptop but used their office desktop or laptop. At the Federal University of Petroleum Resources, 40 staff have their personal laptops while 10 make use of their office laptop or desktop for Internet access. At the Delta State University, Abraka, 30 staff have their own laptop for internet browsing while 20 make use of their office desktop or laptop. In the same vein, at the Petroleum Training Institute, Effurun, 40 staff randomly selected for this research have their personal laptop while 10 do not have but they use their office desktop or laptop to gain access to the Internet. Similarly, at the College of Education, Warri, 30 out of the 50 staff randomly picked for the study, have their personal laptop while 20 do not have but they use the desktop or laptop of the office.

Table 2: Distribution of respondents by Internet network subscription

Name of Network provider	FUPRE	DELSU	PTI	College	Total
MTN Network	0	20	20	20	60
GLO	0	6	6	4	16
Etisalat	0	10	4	4	18
Airtel	0	10	4	4	18
Visaphone	0	4	0	2	6
Starcoms	0	0	16	16	32
Institution subscription (provision via wireless)	50	0	0	0	50
Total	**50**	**50**	**50**	**50**	**200**

Considering the subscription pattern of the staff, the study revealed as indicated in the Table 2 above that 60 staff out of the 200 staff used for the study subscribed to the Internet using MTN network while 16 staff make use of GLO network. In the same vein, 18 staff use Etisalat, so also 18 make use of Airtel network. Similarly 6 staff connects to the Internet using visaphone while 32 staff makes use of starcoms especially at the Petroleum Training Institute and the College of Education Warri. The study equally revealed that there were staff that do not subscribed at all as at the time of data gathering December 2014 and analysis in January 2015 but used the university wireless service powered by the ICT department of the University at the Federal University of Petroleum Resources, Effurun that was effective then. In a way, it saved the staff from extra expenses but when the wireless signals occasionally failed they result to the use of other means such as phones and the school e-library or USB modem or smart phones like black berry (BB) among others.

Table 3MODEM subscription pattern

Name of Network MODEM	FUPRE	DELSU	PTI	College	Total
MTN	0	16	16	24	56
GLO	0	4	2	4	10
Etisalat	0	4	6	6	16
Airtel	0	20	6	6	32
Visaphone	0	0	0	0	0
Sartcoms	0	0	20	4	24
Universal MODEM	0	6	0	6	12
Institution subscription (provision via wireless)	50	0	0	0	50
Total	**50**	**50**	**50**	**50**	**200**

The recent development in technology which has made it possible for individual to use a MODEM (Modulator and Demodulator, which converts digital signals to analogue and back to digital to have access to the Internet. The study revealed as showed in Table 3 above that 56 staff have access to the Internet using the MTN Modem while 10 staff use the GLO modem. In the same manner, 16 staff used the Etisalat

modem while 32 used Airtel modem. As at the time of the study and among the staff randomly selected, no staff make used of visaphone modem to access the Internet. Similarly, it was discovered during this study that 24 staff make use of starcoms modem especially at the Petroleum Training Institute as at the time of data gathering. It is equally ascertained that at the Federal University of Petroleum Resources where wireless signal is broadcasted through their devices like the routers, wireless repeater boards, the staff do not subscribe using modem but they used their inbuilt wireless device of their laptop or external wireless USB device to gain access to the Internet signals but they have to register with the ICT department to get access username and password as a measure to restrict unidentified users.

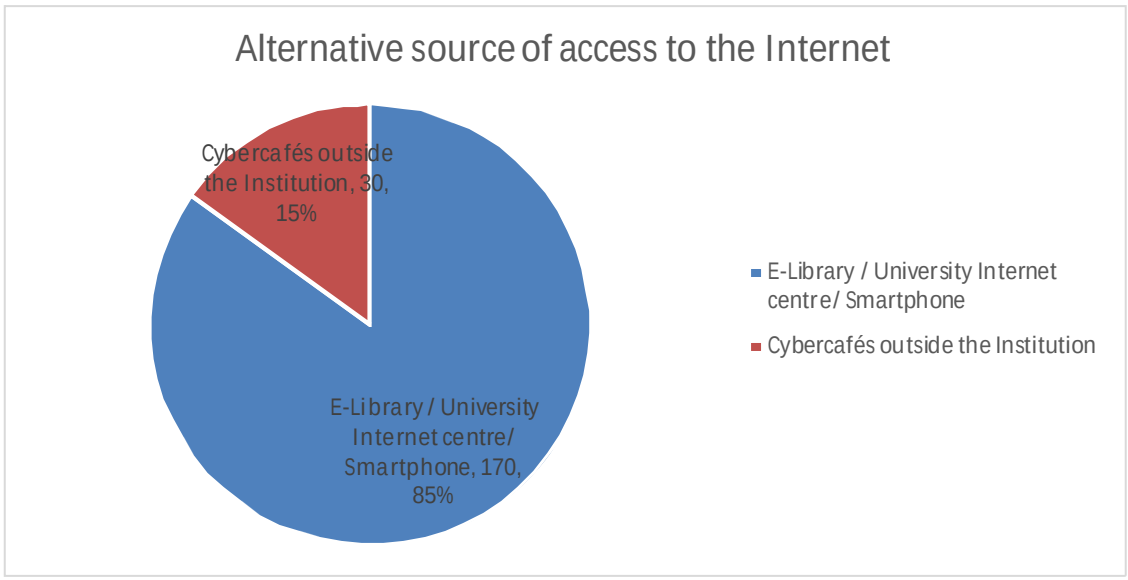
Table 4: Distribution of respondents by the subscription plan

Name of Network provider	Number	%
5GB bundle plan	0	0
3GB	16	8
500MB bundle plan	8	4
300MB	20	10
200MB	40	20
100MB	10	5
50MB	8	4
Hourly / Daily bundle plan	48	24
Institution's subscription	50	25
Total	**200**	**100%**

The study revealed as can been seen from Table 4 above that majority of the staff of the three tertiary institutions involved in bundle plan subscription while the staff of the Federal University of Petroleum Resources do not due to the fact that the school wireless is made available to them. However, when there is no Internet service so many staff make use of modem and data bundle plan using external USB modem or their smart phones such as black berry, other type of phones. A universal modem enables the subscriber use any SIM card to browse the net since such modem accepts any SIM card provided there is airtime.

Distribution of respondents according to alternative source of access to the Internet

Chart4: Alternative source of access to the Internet



The research also discovered that the alternative sources of access to the internet by the staff of the tertiary institutions used, were E-Library or the Institution Internet centre and their smart phones. The study pointed out from the findings that 85% (170) staff used this as an alternative

source of access to the net while 15% (30) staff resulted to cybercafés as their alternative source of access to the Internet as showed in the table 8 above.

Summary of finding

1. The study revealed as showed in Table 4 above that out of the 200 staff randomly selected, for the research 70% (140) staff have laptop or desktop while 30% (60) staff do not have personal laptop or desktop. This implies that in tertiary institution more staff have laptop or desktop but in all indication, some staff have access to either personal or office laptop or desktop as ascertained from this research.
2. The study revealed that both academic (teaching) staff and non-teaching make use of MTN, GLO, Etisalat, Airtel, Visaphone and starcom network provider for Internet access. The study discovered that most staff used the MTN network while some other staff used Etisalat and Airtel network as showed in Table 5.
3. Considering the MODEM used for subscription by the staff of the tertiary institution used for the study, the research revealed that 28% (56) staff subscribed to Internet services using the MTN modem. 20 %(40) of the total population used Airtel. The situation at the Federal University of Petroleum Resources is such that all the staff that used of the Internet for research has wireless access during the working hours. Nevertheless, the staffersof the tertiary institutions have regular access to the Internet either by personal subscription or through institution bandwidth subscription as showed in Table 6.
4. The study revealed that the subscription plan varies from individual to another but identified as showed in Table 7 that most staff 48 (24%) used hourly / daily bundle subscription plan while 40 (20%) used 200MB bundle plan.
5. Addressing the issue of an alternative sources of access to the Internet, the research revealed that the use of the Internet provided by the Institution's electronic library, the school Internet centre, smartphone or the use of outside cybercafés have been main alternative sources of access to the Internet beside usual provision through their subscription or school wireless services. The study pointed out that 85% (170) used their school electronic library, the school Internet centre or their smart phones while 15% (30) staff used of outside cybercafés.

Discussion of finding

It is clear from the research and from literature reviewed so far that connectivity to the Internet are through ISP which most tertiary institutions utilize and the use of USB modem or smartphone that individual staff use in most cases to access the net. The use of modem and smartphones has become prominent in recent time due to technological development. This research discovered that MTN, GLO, Airtel, Etisalat, Visaphone, Starcoms network and modem have been the major providers of Internet network and customized or universal modem. In this respect, the various network provider provide their own modem. That is to say for instance that there is MTN network and MTN modem so also are others. Moreover, the research revealed that both academic and non-academic staff were involved in the use of laptop and subscription using modem. It also opined in this regard that the subscription varies from individual to another and they subscribed using a bundle plan of 3GB, 200MB, 100MB, hourly/daily plan among others.

It may be nice at this point to commend the effort of the federal government of Nigeria for her prompt intervention support in infrastructural and human capacity development project through Tetfund (Tertiary Education Trust Fund) which has enable the tertiary institutions have computers . However, the staff of tertiary institution can be encouraged further by outright offering of laptop to staff or through soft loan that could be deducted for a period of time. This will enable every staff compliant with the technological development wherein access to up-to-date information globally will not be limited by any barrier.

Conclusion

The development in technology which has introduced different means to access the Internet

has made life easy for researchers and other users of the Internet. It is therefore interesting to say as revealed in the study that the use of external modem, smart phones such as black berry among others has promoted rapidly the Internet usage in Nigeria and other parts of the world since MTN, GLO, Airtel, Etisalat, Visaphone, starcoms among others network providers have made the use of USB modem easy and user friendly. Consequently, this has made research easy in the academic environment.

Recommendations:

Based on finding of the study, the research recommends that:

1. Tertiary institutions staff should be encouraged to acquire their personal laptop which can be made easy through soft loan from government that can be paid for a period of time. Alternatively, government can also empower staff through outright gift of laptop to the staff.
2. Government could increase support to the tertiary institutions by offering subsidise subscription of bandwidth through Tetfund intervention project.
3. The network providers should be encouraged by the government of Nigeria to be able to offer broadband that is very fast but with low rate of subscription data bundle plan.
4. The use of modem has really helped so much in access to the Internet however, the modem could be made cheaper and more user friendly for everyone to buy and use for Internet access at home, school and offices in the absence of the institutions subscription.
5. The oil company, banks and other bodies can be encouraged further to assist the institutions by establishing Internet centre in each tertiary institution as they have been doing. This will further improve access to Internet by any staff of any institution which will enhance research in Nigeria.

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