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ADOPTION ASSESSMENT OF INTERNET USAGE AMONGST UNDERGRADUATES IN NIGERIA UNIVERSITIES -A CASE STUDY APPROACH

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Abstract

This study focused on the level of penetration of Internet usage among undergraduate students in Nigeria using Obafemi Awolowo University as a case study. Result showed that about 92% of undergraduate students have embraced the Internet and are using it consistently. The online mean time is 3.5hrs/week while on the average, undergraduate experience of Internet usage is about 4years. We found also that the students use the Internet mostly for e-mail, information search and online chatting; all of these were found to have significant impact on their academics and social life. Further analysis revealed that gender attitude is also an important issue; male students appear to use the Internet more than their female counterparts; just as science based students use it more than the non-science based students. The paper therefore recommends appropriate policies for all higher schools of learning in Nigeria to facilitate further diffusion and use of the Internet.

Keywords: Internet adoption; access point; gender; policy; attitude; internet experience.

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1 Introduction

The Internet has come with an evolution that cannot be compared with existing technologies that were before it. Molosi (2001) remarked that the television revolution took 13 years to reach 50 million viewers and the Internet achieved this mark in only 4 years (Molosi, 2001). There is no doubt that the rate of deployment of new technologies in developing countries is low, especially those of sub-Saharan Africa. This is particularly noticeable in the area of telecommunication and computing infrastructure, such as telephones, power supplies, development of appropriate electronic networks etc (Naidoo & Schutte 1999). Today, the growth in telecommunication infrastructure has led to increase in Internet connectivity. More people get connected to the Internet through ISDN, VSAT and even through their mobile phones. Governments in Africa in their ICT reforms programmes have made efforts to liberalize the market and privatize the sole carrier (Oyeyinka-Oyelaran & Adeya 2002). A number of countries have adopted the Global Systems of Mobile Telecommunications (GSM), which has boosted the overall available telephone lines. For instance, in Nigeria, Zimbabwe and Uganda government have licensed a number of GSM operators. The impact of this moves have been quite dramatic in number of cases for example the Global System for Mobile communication (GSM) in Nigeria before August 2001 there were just about 500,000 mobile and fixed telephone lines in all. Today, the country has over 36 million mobile lines and a little over one million fixed lines for a population of over 140 million, tele-density as at June 2007 stood at 28.42 (NCC, 2007). These transformations have not come in exclusion of country's educational sector. Adeya & Oyelaran-Oyeyinka (2002) also believed that education is antecedent to development. Core research findings have been traced to the universities and the application of these innovations has resulted in tremendous gains to country's economy. A number of universities in Nigeria are now making frantic efforts to improve on their ICT infrastructure; the Obafemi Awolowo University (OAU) became a leader among the universities in establishing Internet and computing infrastructure through assistance from foreign agencies. OAU began with the establishment of a campus wide-area wireless network funded by the World Bank through the International Centre for Theoretical Physics (ICTP) based in Trieste Italy. The network is tagged OAUNet (Adeya & Oyeyinka-Oyelaran, 2002). Now, the academic subnet of OAUNet currently connects 2 colleges and thirteen faculties equipped with a 20km of 2 Gigabit fibre and connects to the Internet on a bandwidth of 6Mbps/1.5Mbps bandwidth (INTECU, 2006). In addition to this, OAU also have in her premise eight cyber cafes namely; Eldorado, Infinite grace, Awo Internet café, Rotunda, Conference centre, Firstnet, Cyber haven, unifecs with VSAT installations of varied capacities.

1.1 Research methods

Three basic research instruments were used to carry out the work on the chosen institution: observations, interviews and questionnaire, the data were gathered in June, 2006. Twenty-five set of structured questions were compiled in a questionnaire, which was administered to 300 students in 10 different faculties from 40 departments. 288 were duly completed and returned, representing 96% response rate. The respondents were selected across different academic disciplines (both science and non-science based), from different departments, and from both sexes, to ensure coverage of all relevant demographic and academic indicators. The significance of these demographic variables was later tested. Some analytical tools embedded in the computer software- Statistical Packages for Social Sciences (SPSS) were used to quantitatively analyze the data, out of which we drew different inferences made in this paper.

2. Results and discussions

Some of the major indicators of Internet usage and its impact as we found out in the work are enumerated, viz: percentages of students using the Internet, point of internet access, time spent online, gender attitude to the Internet, science and non-science student usage and Internet services usage preferences amongst others.

2.1 The penetration- percentages of students using the Internet and their access points?

On faculty basis, we found that less than 10% (46, n=272) of the total students from some of the faculties use the Internet on a daily basis, and about 80% (36) of this number are from science related faculties. About 40% of the total respondents (n=272) use it on a weekly basis, 38.8% use it on a monthly basis and 4% rarely use it, they use it only once in a year. But the overall usage and adoption is calculated at 92% and compare this figure with Oyelaran-Oyeyinka & Adeya (2002) who earlier reported 69% adoption among Nigerian students. This shows an upward movement of 23% Internet usage and adoption among Nigerian university students within 4years, from 2002 to 2006. We also found that the students have more access to the Internet in the Cybercafés (90.8%), followed by departments (5.9%), offices (2.2%), homes (0.7%) and Library (0.4%). Due consideration of our data revealed the need to put suitable policies in place to improve access points in the departments, offices, hostels (homes) and library was established.

2.2 Internet experience and services usage

The ranking of Internet usage experience among the undergraduates were conducted in ten faculties out of the

thirteen in the university. The result showed that students from faculty of technology were ranked highest with the Mean Internet Usage eXperience Index (MUXI) of 3,07 followed by faculty of Agriculture 3,04 ranked second meaning that they have about 4,5yrs experience using the Internet, and faculty of Administration 2,54 ranked least (10th) with about 3yrs experience. Total average MUXI for the students is 2,77 which translates to about 4yrs, meaning

that some of the students have been using the Internet even before they gained admission into the university (Table 1). We found that some of the students with up to 4 years Internet experience are now in 300-500 level of their academic programme. The implication is that in the next two sessions/years we will begin to have Internet literate graduates who will then participate in the labour market.

Table 1. Ranking of Internet usage experience among undergraduates by faculty, (Min) 1=0-1yr, 2=2-3yrs, 3=4-5yrs, 4=6-7yrs, (Max)5= over7yrs.

Faculty	Internet Usage Experience		
	Mean Internet Usage XP Index (MUXI)	Percentages of respondents (%)	Mean XP Ranking
Technology	3,07	9,3	1
Agriculture	3,04	9,3	2
Health Sciences	2,94	11,8	3
Science	2,83	10,7	4
Law	2,76	10,0	5
Pharmacy	2,73	5,2	6
Education	2,67	10,4	7
Arts	2,58	10,0	8
Social Sciences	2,57	12,8	9
Administration	2,54	9,7	10
Average of MUXI	2,77		

2.3 Time spent online

Our further analysis showed that time spent on the Internet is an important issue; we found that students spent an average of 3.5hrs/week online. SPSS generated mean=1.43 and the standard deviation 0.7 using the following categories: 1=1-3hrs/week, 2=4-6/week, and 3=>6hrs/week. This is a considerable improvement when we compare this to an earlier report of Jagboro (2006) whose observation showed that the time spent online for a student in the university was 1hr/week in the same university. Although this is still far behind the time spent when compared to students in developed countries like England.

It was reported by Hills and Argyle (2003) in Luan et al (2005) that students in oxfordshire, England spent an average of 7.9hrs/week. This is likely due to the privilege of having access to the Internet at home and hostels.

2.4 Gender and Level of adoption of Internet usage.

Pearson correlation 2-tailed test was performed on gender and Internet usage of the students; we found that there was a fairly strong correlation between the two variables with a value of 0.326, at a level of significance of 0.01. This

shows that gender have significant effect on Internet usage. Further analysis confirmed that male student use the Internet more than their female counterparts, much more on

a daily basis. At all levels (100-400) male students use the Internet regularly and more often than their female counterparts (Table 2).

Table 2. Evaluation of gender adoption of Internet usage across levels.

Variables/Level	Years -	100		200		300		400	
		Male	Female	Male	Female	Male	Female	Male	Female
*How long have you been using the Internet (yr)	≤3yrs	52,63	43,14	34,15	41,07	20,00	32,61	21,43	16,67
	>3yrs	47,36	56,86	65,85	58,93	80,00	67,39	78,57	83,33
*How often do you use the Internet	-Often ²	77,78	38,00	62,50	38,18	72,73	64,44	71,43	70,00
	Rarely ³	22,22	62,00	37,50	61,82	27,27	35,56	28,57	30,00
*Online time spent/week (hr)	≤3hrs	35,29	81,25	53,66	87,27	53,49	83,72	69,23	50,00
	>3hrs	64,71	18,75	46,34	12,73	46,51	16,28	30,77	50,00

² Often(daily and weekly)

³ rarely (monthly and yearly)

2.5 Science and Non-Science based students

The ten faculties under test were divided into two categories: science and non-science (Table 3). We also have a second level of categorization of frequent and non-frequent users; the frequent users are those that use the Internet both on a daily and weekly basis and the non-frequent users as those that use it on a monthly and yearly basis. Over 60% of those that rarely use the Internet are from non-science based faculty. This is a reflection that most of the non-science based students do not fancy the use of the Internet and do not count it as important. This may be the reason why science based students are more proactive than their non-science based counterparts. It is important now to encourage them so as not to be left behind. Furthermore in Table 3, faculty ranking revealed that

faculty of health science was ranked highest (1) which is an indication of where the most frequent users emerge. Faculty of Agriculture was ranked second (2) and faculty of education was ranked least (8). We carried out further analysis to ascertain what students in the highest rank and the lowest rank faculties actually use the Internet for; interestingly we found that there is no significant difference. They both (highest and lowest ranking faculties) use it mostly for e-mail and information search and the usage are almost at the same level 72% and 70% respectively. Ukwe (2000) and Jenson (2000) in Idowu et al (2004) stated that many people simply use the Internet for e-mail, especially at the forefront of early Internet developments in Africa universities.

Table 3. Science and non-science based categorization by faculty & ranking of Internet usage.

	Faculty	Participation (N)	Frequent Users (FU)	Non-frequent Users (NFU)	Frequent Users (%)	Ranking
Science	Health Sciences	32	23	9	72	1
	Agriculture	26	17	9	65	2
	Technology	26	16	10	62	3
	Science	29	18	11	62	3
	Pharmacy	14	8	6	57	4
		127	82 (64,5%)	45 (35,5%)		
Non-Science	Arts	29	18	11	62	3
	Administration	25	14	11	56	5
	Social Sciences	36	19	17	53	6
	Law	29	14	15	48	7
	Education	30	11	19	37	8
		149	76 (51%)	73 (49%)		

2.6 Internet Service Usage Preference

Most students (over 70%) at all levels use the Internet for e-mail followed by information search about 65% respondents and about 20% use it for chat and finally about 1% use the Internet for other things which are not specified.

2.7 Constraints to the use of the Internet

Constraint focus open-ended question allowed us to gather some of the major constrictions and challenges facing the students in using the Internet. These are: financial constraint, erratic power supply, inefficient Internet links and servers, not having enough time, no personal access to the Internet, not being computer literate, cyber congestion,

lack of reliable storage facilities, long distance and pop-up of pornographic sites (spyware).

3. - Conclusion and Policy recommendations

The widespread implementation of Internet in tertiary institutions in Nigeria necessitates a careful investigation of level of adoption and usage among the students vis-à-vis the impact on their life. Our investigation showed that the majority of the undergraduates in the university use the Internet for many purposes; and have realized the benefits the Internet has to offer undergraduate students in higher school of learning. A large percentage of the students declared that the usage of the Internet has impacted greatly on their academic and social life. This is in agreement with a study by Liaw (2002) who reiterated that the success of Internet utilization was very much related to the user's attitude toward the Internet.

The students in their response indicated that the Internet when put to proper use offers a great number of benefits. They generally believe it serves as information database, helps to search for more information on a particular subject, provides avenue to contact relatives and friends, widens knowledge, and gives information on education, politics and social events. It is used for information development, enhances easy communication globally, improves academic performance, gives information about happenings around the world, used as a research tool, provides solution to assignments, gives information on entertainment & education, a source of scholarship search, creates fun, provides avenue for online business; it also provides immediate information about the university (OAU).

To address some of the problems mentioned by the students, we found erratic power supply to be a major issue, which has to be tackled. Idowu (2004) mentioned that while constant electricity is not a problem in Mozambique as it is the case here in Nigeria. It is essential therefore that government policy be directed at encouraging the reliability of electric power, to avoid further deterioration. 'Catching the students young' is also very important in the application of ICT in education. To achieve this, changes in curricula may be necessary in order for ICT to become the teaching and learning tool that it ought to be. These policies must periodically be reviewed for proper monitoring of compliance in all higher school of learning. Beyond that, Government should seek to increase the amount of, and access to, up-to-date ICT equipment in all higher school of learning as well as provide adequate resource including bandwidth relative to the school population. Adoption of effective strategies to enhance staff skills in the use of ICT to deliver the curriculum is also very important. Greater use of ICT for students, staff, and parent by introducing online

checking of results and information about their academic programmes, assessments, reporting, monitoring and evaluation is also desirable.

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