ENVIRONMENTAL AND INSTITUTIONAL FACTORS INFLUENCE ON INTERNET USE BY THE UNDERGRADUATES IN SELECTED FEDERAL UNIVERSITIES IN SOUTH WEST, NIGERIA

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Abstract

This study investigated the influence of environmental and institutional factors on Internet use by undergraduate students in selected universities in South West, Nigeria. The study used undergraduate students in Obafemi Awolowo University (OAU) and Federal University of Agriculture, Abeokuta (FUNAAB), Nigeria. The copies of the questionnaire designed for the study was administered on 178 purposively selected students from the selected universities out of which only 110 were returned with useful responses making a response rate of 61.8%. The study revealed reliable internet connection (Mean = 3.06), adequate infrastructural facilities (Mean = 2.62), Internet policy (Mean = 2.60), and ICT development policy (Mean = 2.54) as major environmental factors that influenced the use of internet among the students in the selected institutions. Also, the study established inadequate access points for internet use (Mean = 2.60), availability of adequate computer accessories (Mean = 2.55), high cost of internet use (Mean = 2.54), and adequate availability of computers connected to the Internet as major institutional factors that influenced the use of internet among the undergraduate students in the selected institutions. The study revealed that environmental factors significantly contribute positively to Internet use while institutional factors do not significantly influence internet use among undergraduate students in Nigerian universities.

Keywords: Environmental factors, Institutional factors, Internet use

Background to the study

The revolution in Information and Communication Technology (ICT) and particularly the Internet, is exerting profound effects on institutions of higher learning. Many researchers have identified the impact of the Internet on higher education studies (Adogbji and Akporhonor, 2005). The influence of the Internet on the educational system which had been previously confined to communication and resources sharing had gradually developed into a new dimension affecting the teaching-learning process in a direct way. The Internet has come with an evolution that cannot be compared with existing technologies that were before it (Molosi, 2001). The Internet has shifted the paradigm of education from the traditional classroom lecture that it used to be to electronic teaching-learning process. The Internet can be used as a supplement to traditional instructional method (Usum, 2003).

The Internet has the potential to accelerate, enrich and deepen basic skills in teaching and learning. It helps in motivating and encouraging students in learning as they are encouraged to be more independent and responsible for their own learning. The influence of the Internet is pervasive in education, and strengthens teaching and learning as it provides powerful resources and services for students thereby enabling them to meet their individual needs. Also, the Internet allows for networking among students and teachers, thus teachers and students are

more connected with each other. The Internet also facilitate exchange of ideas, sharing of resources, and improve teaching-learning practices as well as provide opportunity for connecting schools to the world, as learning is expanded beyond the classroom, thus, relevant real life context can be established (Abolade and Yusuff, 2005). With the Internet, students and teachers can access information and resources, and they can communicate with experts and peers and make useful contributions to knowledge through electronic publications.

The use of the Internet in education is growing in all parts of the world while their application is becoming an integral part of education in many parts of the globe. Nicolle (2005) affirmed that most of the developed countries have exploited the potentials of the Internet to transform their educational landscape at the tertiary, secondary and even primary school levels, particularly in the instructional process. Also, Al-heala (2001) attested that the Internet use in instructional delivery is a demand that society has placed on educational institutions. Hence educational institutions are therefore expected to equip both teachers and students with skills relevant to meet these demands.

Studies (Oletu, 2007; Ololube 2006) have indicated the benefits of internet use in education and have found consistent positive and moderately high achievement gains at all educational levels from computer mediation in school subjects. Major benefits of internet in education include: promotion of greater collaboration among students for communication and sharing of knowledge; and accurate feed backs to students that contributes towards positive motivation. It also allows students to focus on strategies and interpretations of answers rather than spend time on tedious computational calculations (Becta, 2003). It is generally believed that the permeation of internet into education sector in developing nations such as Nigeria would help to bridge the information barrier between developed and developing nations. However, improved access to internet does not seem to result in improved utilization for research purposes (Forgasz and Prince, 2001).

It is observed that some studies have been conducted on uses of the internet by students in the process of learning (Beuke-Amiss and Chiware, 2003; Al-heala, 2001). Most of these studies were carried out in developed countries where the use of internet has come of age, and where there are resources and material to maintain them. However, researchers in the area of internet use by students generally in Africa and in Nigeria, specifically, have just started emerging.

The effective use of the internet into the educational system could be seen as a complex, multifaceted process that involves not just technology. Competence, adequate funding, students' attitude, skills, students self efficacy and intention to use are key factors that determine the successful use of the Internet for information retrieval and sharing in education. To address these factors, capacity building for users is greatly needed.

Investments are being made by the schools' management to infer the utilisation of the internet and the e-resources at all levels of educational systems. A lot of time and money have also been spent on acquiring the needed infrastructure for the availability and accessibility of the internet for use in the schools. However, despite the huge investment many students still find it difficult using the facility. The exploration and identification of the students self efficacy and skills would ascertain if students will use or not use the internet. Reasons for use and non-use of the internet resources by students and teachers have been investigated by several studies. It is argued that investigation of the students' beliefs and attitude is necessary before implementation of any educational innovation as it is a significant predictor of students' internet usage (Alhaji, 2007).

The increasing awareness of the usefulness and relevance of the internet in the academic and research activities of students for the actualisation of their educational aspirations has put study on Internet use on the research agenda of countries, including Nigeria. Therefore, this study would provide a better understanding of the personal, environment and institutional

factors that determine the use of the Internet by the University students, and consequently the basis for making recommendations that would improve the productivity of the students. This study also provided a basis for decision making recommendations that will improve Internet service availability and use in Nigerian Moreover, the results of this study would also contribute to informed decision making and the basis for recommending effective strategies for integrating of the Internet in teaching, learning and research activities in the Universities.
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Hence, it is timely that a study investigating the various factors influencing university students' use of the internet should be carried out. Thus, this study intends to investigate the environmental and institutional factors that affects the use of internet by undergraduate in Nigerian universities with focus on Obafemi Awolowo University, Ife (OAU) and Federal University of Agriculture, Abeokuta (FUNAAB). The two universities are among the universities that have ICT facilities and infrastructures to support teaching and learning in the institutions.

Objectives of the Study
The broad objective of this study is to investigate the influence of environmental and Institutional factors on the use of the Internet by the students in two Federal Universities in South West, Nigeria. The specific objectives of the study are to:
i.   Identify the environmental factors that determine the use of the Internet by undergraduate students in Obafemi Awolowo University (OAU) and Federal University of Agriculture, Abeokuta (FUNAAB), Nigeria
ii.   identify the institutional factors that determine the use of the Internet by the undergraduate students in OAU and FUNAAB.
iii.   find the correlation among environmental factors, institutional factors and Internet use among undergraduate students in OAU and FUNAAB.

Research Questions
i.   What are the environmental factors that affect the use of the Internet by undergraduate students in the selected universities?
ii.   What are the institutional factors that affect the use of the Internet by undergraduate students in the selected universities?
ii.   What is the relationship among environmental factors, institutional factors and Internet use by undergraduate students in the selected universities?

Literature Review
Factors influencing the use of the internet have been classified by McGuigan (2001) as institutional, instructional, technical and personal factors that have to be dealt with for effective technology integration into education. Nigeria as a nation came late into the ICT revolution and has progressed slowly in the use of the internet in education. This is as a result of limitation brought about by economy disadvantages and government policies which have direct consequences on the nation's educational development. Fundamentally Ololube (2006) identified major environmental factors that may influence the use of internet in education to include, among others, the lack of access to basic ICT facilities, low internet connectivity and lack of computers, and inadequacy in the use of internet resources. This is corroborated by Nertha (2007) that emphasised cost of connectivity accessibility to reliable electricity, lack of training in internet use, lack of trained personnel to service equipment and unavailability of infrastructure as major factors that can stand in the way of successful integration of internet into the curriculum in most African countries.

According to Lishan (2004) one major challenge of the Internet is obstruction of widespread access by poor telecommunications-the result of veiled interests in state monopolies of obsolete

networks with prohibitive price structures. He further emphasized the cost of internet access which is beyond the reach of most institutions and individuals. The high cost is exacerbated by lack of a policy that fosters competition, foreign direct investment and private sector participation. Perhaps the biggest obstacle according to Adeogun (2002) is technical, the limited service bandwidth which affects the ease and spread of access.

Kelceoghu (2006) emphasised inadequate institutional support and inadequate technology support as major institutional factors that affect the use of the internet. This technology support can be viewed from the perspectives of technical support for technical problems and instructional (pedagogical) support for instruction. The institutional factors had considerable effects on students' utilization of internet. Lal (2003) categorized the main institutional determinants of access and use into three categories namely connectivity infrastructure, costs and physical infrastructure of the internet. He further highlighted that in Nigeria, cost ranks as the highest institutional constraints to the use of the internet, and closely followed by physical infrastructure and the connectivity infrastructure. Unlike in Nigeria, Kelceoglu (2006) in his study on factor affecting internet use in Kenya revealed connectivity infrastructure as the most limiting factor, followed closely by costs. In other word, cost, and physical infrastructure were considered major institutional factors determining the use or non-use of the internet. Baguchi and Udo (2007), in their study, emphasized that there are many institutional level factors determining the adoption and use of the internet in developing countries. Among such factors are infrastructure, lack of institutional policy on ICT resources development, technology supply problems, scarcity of human resources, education problems, and economic factors.

The focus on the technology, as opposed to the need to apply it to the situation of teaching and learning, has dominated many studies, and it may be that this has led to the common belief that internet in schools is a technology-driven activity (Tearle 2003), when in fact the process is about change management and how the organization supports the use of the technology as a change enabler. Internet use and perception in schools is about the institutions people, process and policies, not the infrastructure in use.

Environmental factors are identified as other key factors that influence internet usage. Lee, Lin, and Pai (2005) emphasised a positive correlation between factors brought about by competition pressure on one hand, and organisational performance on the other hand. Standing and Vasudavan (2001) found that environment context is a significant factor in Internet technology. Also, Grover (2003) proposes that environmental, organisational, policy, support, and system related factors are the ones that determine the adoption and use of the Internet in organisations and institutions while Nguyen (2007) proposes that environmental factors are the ones that determine the adoption of the Internet. In other words, adequate policy support and institutional readiness to provide the entire necessary infrastructure to support the Internet facility determine the extent of availability, accessibility, and use of Internet in an institution. Choe (2003) also empirically showed a positive relationship between perceived environmental factors and internet adoption and usage.

Kwom and Zmud (1999) defined environmental factors among the five contextual factors that include community characteristics, organisational characteristics, technology characteristics, and task characteristics. It should be noted that there are macro-environmental factors common to all institutions, such as change in political climate and product market competition which may influence technology adoption which cannot be easily accounted for in the micro-analysis of institutional level (Lee et.al)

Research Methodology

The survey research design was adopted in this study. Surveys are normally used when there is need to study a large population requiring a sample to be drawn. There is a total of 19, 250 undergraduates students at Obafemi Awolowo University, Ile Ife while the Federal University

of Agriculture, Abeokuta has a population of 16, 811 undergraduate students. The purposive sampling technique was used in selecting the respondents for the study among the undergraduate students in the two selected institutions. A total of one hundred and seventy eight (178) copies of the questionnaire prepared for the study were administered on the undergraduate students selected from the two universities viz Obafemi Awolowo University (OAU) and Federal University of Agriculture, Abeokuta (FUNAAB). Eight two (82) of the purposively selected students were from OAU while 96 were from FUNAAB. The questionnaire was served only after ascertaining that a particular student makes use of the Internet for academic and research purposes. The questionnaire was pre-tested on 36 selected undergraduate students from the University of Ibadan that were not part of the study. The analysis of the data collected through the pre-test gave a reliability coefficient (Cronbach Alpha) of 0.81. The data for the study were personally collected by the researcher.

Result and Discussion

A total of one hundred and seventy eight (178) copies of the questionnaire designed for the study were administered on the students, out of which only one hundred and ten (110) copies were returned with useful responses, making a response rate of 61.8%.
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Research Question 1: What are the environmental factors that affect the use of the Internet by the Undergraduate Students?

Table 1 shows the analysis of means and standard deviation of environmental factors influencing Internet use by undergraduate students. The finding revealed reliable internet connection (Mean =3.06), adequate infrastructural facility (2.66), and ICT development policy (2.54) as topping the list of environmental factors influencing the use of Internet by the undergraduate students in OAU and FUNAAB (Table 1). The weighted average estimated mean of environmental factors influencing the use of Internet by the undergraduate students in OAU and FUNAAB was **2.61** which is greater than the expected mean of **2.42**. Hence the conclusion can be drawn that environmental factors influence the use of Internet by the undergraduate students in OAU and FUNAAB.

Table 1: Respondents opinion on environmental factors affecting Internet use

SN	Statement	SA	A	D	SD	Mean	SD	Sig
1	I find the Internet connection reliable whenever I am browsing	31	57	20	2	3.06	0.733	***
2	I cannot use Internet resources in my Internet because it the environment is conducive	7	23	63	17	2.18	0.768	*
3	There is an adequate infrastructural facility to support Internet use	10	61	31	8	2.66	0.745	***
4	ICT development in my Institution is encouraging to users	13	46	38	13	2.54	0.853	**
	Average weighted means					2.61		

X=Means Scores=2.61
Highly ***
Moderate **
Low *

Research Question 2: What are the Institutional factors influenced the use of Internet by the undergraduate students?

Table 2 shows the analysis of mean and standard deviation of level of institutional factors influencing the use of Internet by the undergraduate students in OAU and FUNAAB. The information from the Table shows inadequate access points (Mean = 2.60), adequate computer accessories (Mean = 2.55), cost of using the Internet (Mean = 2.54), and adequate availability of computer connected to the Internet (Mean = 2.40) as topping the list of institutional factors that influence the use of Internet by undergraduate students in OAU and FUNAAB. Also, the weighted average estimated mean of Institutional factors influencing the use of the Internet by the undergraduate students in OAU and FUNAAB was **2.41** which is less than the expected mean of **2.60**. Hence the conclusion can be drawn that Institutional factors do not have significant influence on the Internet use among undergraduate students in OAU and FUNAAB.

Table 2: Respondents opinion on institutional factors influencing Internet use

SN	Statement	SA	A	D	SD	Mean	SD	Sig
1	The computer provided in the ICT centre for Internet use are enough	6	37	51	16	2.30	0.785	*
2	There is adequate availability of computers connected to the internet	12	27	64	7	2.40	0.769	**
3	There is adequate training for students on how to use the Internet	9	26	64	11	2.30	0.761	*
7	The rules and regulations governing the use of Internet in my Institution is too hard for the students	6	33	59	12	2.30	0.736	*
9	There are inadequate access points for the Internet use in my Institution	8	60	32	10	2.60	0.757	***
10	The cost of using the Internet in my Institution is too big	12	48	37	13	2.54	0.842	***
11	There are adequate computer accessories and resource (e.g Printers, scanner) to support Internet use in my Institution	20	32	46	12	2.55	0.915	***
12	There is adequate provision of steady power supply in my Institution	11	39	37	23	2.35	0.923	*
14	There is adequate administrative and technical support for Internet use by Students	11	35	50	14	2.39	0.836	**
	Average weighted means					2.41		

X=Means Scores=2.41; Highly ***; Moderate **; Low *

Research Question 3: What is the relationship among environmental factors, institutional factors and Internet use by the undergraduate students?

Table 3 presents the inter-correlations matrix of all the variables, (Internet use, Institutional factors) to show the relationships that exist among the variables of the study.. (N=110). The result reveals that Institutional factors (r=0.271) has a positive significant relationship with Internet use. This implies that there is a close relationship between institutional factors and extent of Internet use by the undergraduate students in OAU and FUNAAB.

Table 3: Analysis of the Relationships Among Environmental Factors, Institutional Factors, and Internet Use

	Variables	1	2	3	4	Sig.
1	Use of Internet	1.000				
2	Institutional Factors	.271**	.200**	.547**	1.000	**
3	Mean	15.72	43.25	20.60	34.80	
4	S.D	3.77	9.44	3.75	5.13	
5	N	110	110	110	110	

** Correlation is significant at the 0.01 level (2 tailed)

Discussion of findings

The study established that institutional factors significantly contribute to Internet use among the undergraduate students. This corroborates Choe (2003) view that emphasised a positive relationship between perceived environmental factors and Internet adoption and usage in China. The environmental factors found to have influence on the use of Internet by the students, as revealed by this study, include: reliable internet connection, adequate infrastructural facility to support Internet use, and ICT development facility. These factors were found to contribute towards Internet use by the undergraduate. The findings of the study further revealed provision of adequate infrastructural facilities as having a significant influence on Internet use by the undergraduate students. This corroborates Usum (2003) that reported lack of adequate facilities as major environmental barriers that can affect the use of the Internet for teaching and learning in tertiary institutions.

The study further revealed inadequate access points for Internet use, adequate computer accessories, cost of using the Internet, and adequate availability of computer connected to the Internet as factors that contribute to Internet use among the undergraduate students. However, joint contribution of the institutional factors towards Internet use revealed that the institutional factors do not significantly influence Internet use among the undergraduate students. This is in disagreement with Kelceoghu (2006) view which emphasised that institutional factors do have considerable effects on students' utilisation of Internet.

Conclusion and Recommendations

This study investigated the influence of environmental and institutional factors on Internet use among undergraduate students in Nigerian universities. The findings of the study generally showed that environmental factors do significantly influence Internet use while institutional factors do not have any significant influence on Internet use among undergraduate students in Nigerian universities. In this context, the following recommendations were made;

a) There is need for adequate provision of conducive environment by authorities in Nigerian universities in terms of adequate policies framework, steady power supply, reliable internet connection etc to ensure that the Internet is always available for use always

b) The high cost of Internet access that is hindering the use of the Internet should be addressed. If possible, the management of the universities should find a way of subsidising the cost of Internet access and make it affordable to the students.

c) There should be adequate policy provision that would explain how the Internet facility is to be used by all stakeholders in the institution concerned.

d) Adequate provision of infrastructural facilities such as stable power supply, more access points, as well as adequate provision of hardware and equipments should be seriously considered. This is to ensure effective performance of the Internet facility in terms of speedy access, fast retrieval and easy download of information resources.

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