Institutional Factors and Perceived Usefulness as Predictors of Internet Use by Postgraduate Students at the University of Ibadan, Nigeria

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Introduction

Interest in the use of Internet has recently increased significantly. As the learning, teaching, research and management function importance of the Internet continues to rise in educational institutions; understanding of the factors that encourage Internet use in these institutions becomes critical (Jiang, Hsu, Klein, and Lin, 2000). Also, 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).

Today's education system faces the challenge to prepare individuals for the information society in which one of the most important aims is to handle information. It is assumed that students need to respond to the rapidly changing technology and prepare themselves to handle information. The influence of Internet on the education 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.

Internet has become an indicator of a country's socio-economic status in the information society as it has become an important and popular source of information. Internet has come with an evolution that cannot be compared with existing technologies that were before it (Molosi, 2001). Today growth and advancement in telecommunication infrastructure has led to increased Internet connectivity. 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). To complement a lecture, instructors may ask students to find specific web sites to gain more in-depth

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knowledge about a particular topic. The instructor may also ask students to search the Internet for information on services offered in a particular location.

The Internet may also be used to replace the traditional classroom lecture through the offering of courses via the Internet (Hawkins, 1999). The Instructor can place course notes on pages create a video recording of live lecture for viewing on the Internet or use combinations of these ideas. Zakon (1999) emphasized several methods of preparing courses for the Internet including the use of video clips and other graphics on web pages.

Since Internet's infancy higher education institutions have pioneered many innovations (Bates, 2000). He further emphasised that Internet have allowed higher education to, among other things, expand access to education and training; raise quality; lower costs; and increase cost-effectiveness. It also enabled higher institutions to, expand the number of courses and programs; generate higher levels of tuition-based revenues; develop specialized programs of study that would not otherwise be possible; and use the process of technological innovation as a vehicle for revitalisation of other aspects of their operations (Daniel, 2001).

Moreover, students coming out of the high school systems in those countries are increasingly aware of the opportunities offered by the Internet users prior to entering a university. The Internet is used as a research tool, and has become very important means of information dissemination, that is, communication, for individuals, governments, businesses and educational institutions (Oniyide, 1998). The use of Internet by students is being addressed extensively in recent scholarship and research. One major area of inquiry involves the role of the Internet in conducting research for class projects (Lindsay and McGuigan, 2001)

The Nigerian National Policy for Information Technology (2001) defined Internet as the interconnection of systems or subsystems of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information". Thus, the Internet can be seen to provide resources and services that for accessing, processing, gathering, manipulating, and presenting or communicating information. These could include software, hardware, and even connectivity (Anderson & Baskin, 2002). Internet is becoming an essential tool in any educational system. It has the potential of being used to meet the learning needs of individual students, promote equality of educational opportunities; offer high quality learning materials, increase self-efficacy and independence of learning among students, and improve teachers' professional development. Furthermore, Internet offers great potentials for revolutionizing school administration (Kirschner & Selinger, 2003).

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 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, Internet ICT allows for networking among students and teachers, thus teachers and students are more connected with each other. 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 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 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 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 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). Furthermore, Internet also supports constructivist pedagogy wherein students use technology to explore an understanding of concepts. This approach promotes higher order thinking and better problem solving strategies.

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).

The use of Internet in Nigeria and African countries generally is increasing and dramatically growing. However, while there is a great deal of knowledge about how Internet is being used in developed countries, there is not much information on how it is being used for research activities in developing countries. (Beukes – Amiss and Chiware, 2006). The role of Internet in teaching, learning and research is rapidly becoming one of the most important and widely discussed issues in contemporary education policy.

The use of Internet for educational purposes usually involves the use of e-mail, newsgroup, chartgroup etc for communication, collaboration and information sharing. Internet holds greater promise in the education process. However, in spite of the potentials of Internet, its use by students, especially in Nigeria, is limited as only resourceful and competent students can exploit the potentials (Oletu, 2007).

It is observed that some studies have been conducted on uses of 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 provision of an appropriate framework for the full integration of Internet into the education system of any nation is the responsibility of the federal or central government as the case may be. For the proper integration of the Internet and related technologies into the education system, there is need for a comprehensive policy document to serve as a guide for stakeholders in the education sector. Such policy document is expected to give direction to the provision of the conceptual framework, the objectives, the strategy, the action plan and the evaluation of the successes of the integration.

The effective use of Internet into the educational system could be seen as a complex, multifaceted process that involves not just technology. Competence, adequate funding, provision of infrastructural facilities, institutional factors, environmental factors, demographic factors, students' attitude, skills, students self efficacy and intention to use are key factors that determine the successful use of Internet for information retrieval and sharing in education (Chan, 2005). There has been few studies on the demographic and environmental factors influencing the use of Internet for educational purposes (Aramide, Gbotosho, and Sote, 2011; Egbetokun and Siyanbola, 2010; Lee, Lin and Pai, 2005; Kirk and Zander, 2004) among others. Thus, this study intends to specifically focus on the institutional factors that influence the use of Internet use in universities with specific focus on the postgraduate students at University of Ibadan.

Statement of the Problem

The influence of Internet on education and educational activities has been a pronounced world especially in this age of knowledge economy such that the education stakeholders at all levels of education are relying on the Internet facility to institute the expected change in teaching and learning paradigm. This has been against the back drop that administrators are pumping large amount of resources in a bid to increase availability of and accessibility to Internet resources in educational institutions. These developments have placed a lot of pressure on educators to transform schools through technology.

The adequate provision of facilities and resources for Internet use has been found to be key factor in the effective use of Internet for educational activities such as teaching, learning, and research. The availability of these resources and facilities varies from one institution to the other which ultimately may affect and determine the way and purpose for which Internet facilities are used by students and staff of any particular institution as well as the extent to which such Internet resources and sources would be used. Hence, this study is focussing on the Institutional factors predicting the use of Internet by the postgraduate students of the University of Ibadan.

Objectives of the Study

The broad objective of this study is to investigate the influence of personal, environmental and Institutional factors on the use of Internet by the postgraduate students at University of Ibadan, Nigeria. The specific objectives of the study are to:

i. identify the institutional factors that determine the use of Internet by the postgraduate students in University of Ibadan

ii. ascertain the perception of the postgraduate students on the usefulness of Internet resources and sources for academic activities.

Research Questions

ii. What institutional factors affect the use of Internet by the postgraduate students in University of Ibadan?

iv. What is the perception of the postgraduate students on the usefulness of Internet sources and resources for academic and research activities?

Research Hypotheses

H_{01} There is no significant relationship between institutional factors and Internet use among the postgraduate students in the University of Ibadan

H_{02} There is no significant relationship between perceived usefulness of Internet and Internet use among the postgraduate students in the University of Ibadan

Scope of the Study

This study focuses on the influence of personal factors, environmental factors, and institutional factors on Internet use by postgraduate students in University of Ibadan. The study covers only postgraduate students in the Faculty of Science in the University of Ibadan. The study identified the extent of Internet use as well as the roles played by personal, environment and institutional in the use of Internet by the postgraduate students. However, even though the study aimed at determining the influence of personal factors, environment factors, and institutional factors on the use of Internet by postgraduate students, it only focuses on the use of Internet for research and academic activities.

Literature Review

Factors influencing the use of 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 and has progressed slowly in the use of Internet in education. This is as a result of chronic limitation brought about by economy disadvantages and government policies which have direct consequences on the nation's educational development.

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Fundamentally Ololube (2006) identified major barriers to effective use of Internet in education to include, 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.

Institutional factors hindering and influencing conditions for adoption and use of Internet by students are like two faces of the same coin (Chan, 2005). The same factor may be a facilitating factor if it is present while lack of that same factor may be a barrier. Moreover, Lishan (2004) reiterated that the utilization of Internet is a function of several factors among which is the perceived ease of access to the Internet while there are various challenges that constrain the use of Internet by users. He further emphasized that one of the major challenge of Internet is obstruction of widespread access by poor telecommunications the result of veiled interests in state monopolies of obsolete networks with prohibitive price structures. Anderson (2004) on the other hand 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 environment that fosters competition, foreign direct investment and private sector participation. Adeogun (2002) in his own view sees the biggest obstacle to Internet us as the limited service bandwidth which affects the ease and spread of access.

Institutional support is a major factor that affects the use of Internet. According to Adams (2003) inadequate technology support can hinder effective use of Internet in teaching-learning process in the schools. This technology support can be viewed from the perspectives of technical support for technical problems and instructional (pedagogical) support for instruction.

The institution factors had considerable effects on students' utilization of Internet. Alhaji (2007) 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 institution constrains to the use of Internet, and closely followed by physical infrastructure and the connectivity infrastructure. Adams (2003) in his study on factor affecting Internet use in Kenya revealed connectivity infrastructure as the most limiting factor, followed closely by costs.

Also, Baguchi and Udo (2007) emphasized that there are many institutional level factors determining the adoption and use of 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. Adeoye (2004) observed that a policy and institutional framework is needed to explain the diffusion of Internet into educational institutions in Africa. To properly use Internet, institutions should provide the basic infrastructural requirements such as electricity, while commitment from policy makers should be put in place. However, Anderson (2002) observed that many developing countries have a long way to go before securing a steady supply of electricity. As much as organizations and institutions tried to make available Internet

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facility for use by their people, inadequate access points, connectivity problems as well as affordable computing accessories are major constraints (Lishan, 2004). These constraints are strong factors against Internet use since they bring extra costs to end-users.

Leadership and management approaches specifically in the ICT arena in organizations are also critical in determining the extent of use of Internet particularly when viewed in the context of broad organizational objectives. Benneth (2003) investigated the alignment between organizational critical success factors and Internet use. That is key organizational processes can positively influence the capability of people to use Internet

Yuen, Law and Wong 2003, investigated the links between leadership characteristics and successful ICT resources initiatives in schools. They emphasized that leadership characteristics can also affect the context of Internet use in schools. Yuen et. Al.'s work is extremely useful in categorizing educational institutions based on certain aspects of their organizational culture as it relates to ICT resources implementation and use. With the system and technology held constant it will be factors such as leadership characteristics that will determine the varying levels ICT implementation success, and Choe (2003) identified strong leadership; excellence across the schools operations; Positive ethos and collaborative culture; and well-motivated and caring staff as major institutional characteristics determining the extent of use of Internet in an organization.

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 the that has led to the common belief that Internet in schools is a technology-driven activity (Usum. 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. Choe (2003) observed that the issue Internet use is not about the relative importance of equipment, support or training, but a much broader debate about mindsets, assumptions, beliefs and value of individuals and organizations.

Also, Lee, Lin, and Pai (2005) emphasized the school ICT capacity as a major institutional factor influencing the adoption and use of Internet facility by students. Internet adoption and use is observed to have a strong relationship with Internet skills and knowledge.

As much as users would want to use the Internet and be able to derive maximum benefits from its use either for education, communication or recreation purposes, major technical factors make this impossible. Technical factors are factors related to technicalities in effective search, downloading, evaluating and use of Internet and Internet resources (Chan, 2005). Lishan (2004) highlighted some technical factors that hinder effective use of Internet to include, technological obsolescence of hardware and software which may pose problems of access to information in digital form, unless urgent interventions are taken; funding for regular refreshing and preservation of digital resources; and high infrastructure costs associated with design and implementation of Internet, among others.

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Moreover, the Internet in general is yet to be rooted and institutionalized in people's cultural life. They pose challenges of usability nature, despite the fact that many users are gaining high level of familiarity with computer and web searching, they are still unable to see the value of Internet due to their lack of adequate skill, especially with respect to navigation, support and usability. Users perceive usability as poor and one that obligates them to keep up with training and retraining.

Furthermore, Kwom and Zmud (1999) and Robertson and Gatignon (2006) developed a more comprehensive frameworks for studying organisational adoption and use of Internet and Kwom and Zmud (1999) defined institutional 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-institutional 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 at institutional level (Lee, Lin and Pai, 2005). Meso, Musa and Mbarika (2005) emphasised that developing countries lag in adopting modern technologies such as Internet facilities for reasons such as geo-political, cultural, structural, ethnic, environmental and socio-economic policy factors.

Ajayi (2002) reported lack of adequate facilities as major institutional barrier affecting the use of Internet for teaching and learning in tertiary institutions. According to him many institutions lack adequate ICT infrastructure such as computer hardware and software and high speed Internet.

Research Methodology

The survey research design method was adopted for this study while the questionnaire was used as the major instrument of data collection. The population for this study comprises of all the 793 postgraduate students in the Faculty of Science, University of Ibadan. (Postgraduate School Record, 2010).

The purposive sampling technique was used to select only the students that make use of Internet facilities. This is determined through a pre-administration of questionnaire interview. Every student was asked on whether they make use of Internet. The questionnaire was served only after ascertaining that a particular student makes use of Internet for academic and research purposes. A total number of one hundred and seventy eight (178) students were purposively chosen for the study.

The data for this study was collected with the use of questionnaire. Copies of the questionnaire were administered on the 178 postgraduate students purposively selected from the Faculty of science. Also, the interview method was adopted to complement data collected through the use of questionnaire.

Data Analysis and Discussion of Findings

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 two hundred and nine (110) copies were returned with useful responses, making a response rate of

61.8%. This study has its central focus and objective on the Institutional Factors as Predictors of Internet Use by Postgraduate Students of University of Ibadan with special focus on the postgraduate students at the Faculty of Science.

The descriptive statistics i.e. frequency and percentages as well as the inferential descriptive such as Paired T-test, Regression and Mean distribution were used in analysing the data as well as to test the hypotheses at 0.05 level of significant.

Table 1: Personal factors of respondents

Variables		Frequency	Percentage (%)
Sex	Male	60	54.5
	Female	50	45.5
Total	Total	110	100.0
Age	Less than 20 yrs	2	1.8
	21 – 25 yrs	20	18.2
	26 – 30 yrs	42	38.2
	31 – 35yrs	29	26.4
	36yrs Above	17	15.5
		110	100.0%
How long have being using the Internet	Less than 1 year	10	9.1
	1 to 5 years	49	44.5
	6 to 10 years	34	30.9
	11 to 15 years	13	11.8
	16yrs and Above	4	3.6
Total		110	100.0

Table 1 which shows the demographic characteristic of the respondents revealed the gender distribution of respondents to include 60 (54.5%) male respondents and 50(45.5%) female. This implies that there are more male respondents among the postgraduate students at the Faculty of science than female. Also the table presented information on the age group of respondents which revealed that majority 64 (58.2%) of the respondents are within the age range of 30 years. This implies that majority of the postgraduate students in the Faculty of science are young people.

On how long the respondents have been using the Internet, it was revealed that majority of the respondents 83 (75.4%) have been using the Internet for between 1 to 10 years while only few of the respondents (17 (15.4%) have used Internet an upward of 11 years and above. This may mean that the postgraduate students are familiar with the use of Internet due to the reasonable number of years they have been using the facility.

Table 2: Competency level of respondents

Variable		Frequency	Percentage
How would you rate the competency level in the use of Internet	I can't say	4	3.6
	Low competency	4	3.6
	Moderate competency	67	60.9
	High Competency	35	31.8
	Total	110	100.0

Table 2 shows the rate of competency level in the use of Internet of respondent, the summary from the table revealed that a larger proportion of the respondents 102 (92.7%) has reasonable competency level in the use of Internet. The high proportion of respondents that are competent in the use of Internet may be due to the number of years the students have been using the Internet which has made them to be familiar with the Internet.

Research question 1: What Institutional factors affect the use of Internet by the Postgraduate students in University of Ibadan

Table 2: Shows the level of institutional factors predicting Internet use

SN	Variables	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	*
4	Interaction with colleagues enabled me to use Internet effectively	27	66	13	4	3.05	0.715	***
5	The environment in the ICT centre is conducive	9	55	45	1	2.65	0.642	***
6	There are policies to support ICT use in academic work in my Institution	13	51	37	9	2.62	0.801	***
7	There are adequate rules and regulations governing the use of Internet in my Institution	18	54	29	9	2.74	0.831	***
8	There is an adequate infrastructural facility to support Internet use	10	61	31	8	2.66	0.745	***
9	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	*
10	The burden of my academic work does not allow me to make use of the Internet	7	30	65	8	2.33	0.705	*
11	There are inadequate access points for Internet use in my Institution	8	60	32	10	2.60	0.757	***
12	The cost of using Internet in my Institution is too expensive	12	48	37	13	2.54	0.842	***
13	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	***
14	There is adequate provision of steady power supply in my Institution	11	39	37	23	2.35	0.923	*
15	The connectivity to the Internet in my Institution is reliable	4	44	45	17	2.32	0.777	*
16	There is adequate administrative and technical support for Internet use by Students	11	35	50	14	2.39	0.836	**
	Average weighted means					2.487		

X=Means Scores=2.487, Highly ***, Moderate **, Low *

Table 2 shows the analysis of institutional factors predicting Internet use by the postgraduate students using the means and standard deviation. The information from the Table shows that the postgraduate students affirmed that Interaction with colleagues enabled (X =3.05), availability of adequate rules and regulations (X =2.74), adequacy of infrastructural facility to support Internet use (X =2.66), provision of conducive ICT environment (X ==2.65), adequate policies to support ICT use in academic work (X =2.62), and availability of adequate computer

accessories (X =2.55) as institutional factors that positively predict their use of Internet, while on the other hand affirming that the inadequate provision of access points for Internet use (2.60) and, high cost of Internet access (X =2.54) as institutional factors that hinders their use of Internet.

Also, the weighted average estimated mean of Institutional factors that encourage the postgraduate students' use of Internet in University of Ibadan was 2.48 which is greater than 2.30 expected mean. Hence the conclusion can be drawn that Institutional factors influence the use of Internet by the Postgraduate students in University of Ibadan.

question 2: What is the perception of the postgraduate students on the usefulness of Internet sources and resources for academic and research activities?

Table 3: Respondents opinion on the usefulness of Internet sources and resources for academic and research acativities

SN	Variables	Very Useful	Useful	Fairly Useful	Not useful	Mean	SD	Sig
1	Downloading of information for assignment purposes	71	34	4	1	3.59	0.610	***
2	Conducting research	59	39	12	0	3.43	0.683	***
3	Searching for and downloading professional and disciplines information	42	38	22	8	3.04	0.938	***
4	Communicating and Chatting with Colleagues and teachers	72	31	5	2	3.57	0.670	***
5	Online learning	45	31	22	12	2.99	1.027	**
6	Videoconferencing and Teleconferencing purposes	9	32	26	43	2.06	1.007	*
	Average weighted means					3.113		

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X = Means Scores = 3.113, Highly ***, Moderate **, Low *

Table 3 presents the analysis of the perception of the postgraduate students on the usefulness of Internet for academic and research activities using the Mean and Standard deviation and it shows that the respondents attested to the usefulness of Internet resources for: downloading of information for assignment purposes (X =3.59), communicating and chatting with Colleagues and teachers (X =3.57), conducting research (X =3.43), searching for professional and disciplines information (X =3.04), and online learning (X=2.99). This implies that the postgraduate students considered the Internet resources useful for their academic and research activities. The poor perception of the respondents about the usefulness of Internet for videoconferencing/teleconferencing may be due to the challenge of low bandwidth which mat hinder effective use of videoconferencing and teleconferencing facilities.

On the other hand, the weighted average mean distribution of the respondents on their opinion on the usefulness of Internet revealed that the weighted average estimate of 3.11 is greater than 2.06 which is the expected mean. Hence the conclusion can be drawn that Internet is considered useful for academic and research activities by the postgraduate students.

Ho:-There is no significant relationship between Institutional factors and Internet use among the Postgraduate Students in the University of Ibadan

Table 4: Paired T-Test of Personal factors and Internet Use

Variable	N	Mean	Std. Dev	Std Error	t. Cal	t. Crit	df	Sig(2 tail)
Institutional factors	110	41.15	6.34	0.6103	26.211	3.57	109	0.000
Internet use	110	10.38	1.42	0.2235				

t Calculated value = 26.211, t Critical value = 3.57, df = 109, p = 0.000
Decision=0.05 level of significant

Table 4 presents information on the analysis of the relationship between the independent variable (institutional factors) and the dependent variable (Internet use) and it shows that there is a significant relationship between institutional factors and Internet use (the t- Calculated value, 26.211 was greater than t-Critical values, 3.57, df=109, P=0.000<0.05). The Null hypothesis was rejected. Therefore, it was concluded that there is a significant relationship between institutional factors and Internet use among the Postgraduate Students in the University of Ibadan.

Research Hypothesis 2

Ho:-There is no significant relationship between perceived usefulness of Internet and Internet use by the Postgraduate Students in the University of Ibadan

Table 5: Paired T-Test of Perceived Usefulness and Internet Use

Variable	N	Mean	Std. Dev	Std Error	t. Cal	t.Crit	df	Sig(2 tail)
Perceived Usefulness	110	20.60	3.75	0.3579	12.317	1.96	109	0.000
Internet use	110	15.72	3.77	0.3599				

t Calculated value = 12.317, t Critical value = 1.96, df = 109, p = 0.000

Decision =0.05 level of significant

Table 5 presents information on the analysis of the relationship between the independent variable (perceived usefulness) and the dependent variable (Internet use) and it shows that there is a significant relationship between perceived usefuness and Internet use (the t- Calculated value, 12.317 was greater than t-Critical values, 1.97, df=109, P=0.000<0.05). The Null hypothesis was rejected. Therefore, it was concluded that there is a significant relationship between perceived usefulness of

Internet by postgraduate students and Internet use among the Postgraduate Students in the University of Ibadan.

Discussion of Findings

The personal information of the respondents according to the findings of the study revealed that there are more male students at the postgraduate level of study of the Faculty of Science, University of Ibadan. The findings of the study further revealed that the age range of the postgraduate students is within 21 – 35 years which implied that there are mature students at the postgraduate levels of study in the University of Ibadan. This corroborated Mayanja (2002) views that emphasized that the youth within the age range 21 – 40 years are capable of making use of Internet more than any other age group.

Also, the study revealed that the postgraduate students have been using Internet for a reasonable long period of 6 years and above, hence they are considered as being experienced in the use of Internet just as this has translated into the competency level affirmed by the postgraduate students.

The findings from the study further revealed length of years of using Internet and Internet competency level of the students as major personal factors that significantly contribute to and influence the use of Internet by the students. This may therefore mean that the familiarity with Internet use as a result of longer period of time of use and the competency level achieved by the postgraduate students would determine the extent of use of Internet. This finding corroborated Alampay (2006) that the years of experience that a students has in the use of Internet determines how frequently he/she would want to use the Internet. The years of experience determines the degree of skill and competency one has in the use of Internet which ultimately influences the interest to use regularly or not.

On the influence of institutional factors on Internet use among the postgraduate students, findings from the study revealed, adequate availability of computers, interaction with colleagues on Internet use, conducive ICT environment, adequate rules and regulations governing the use of Internet, adequate policy to support ICT use for academic work and adequate availability of computer accessories and resources as major institutional factors that positively contribute significantly to Internet use by the postgraduate students at the Faculty of science of the University of Ibadan.

Moreover, the findings of the study further revealed that the postgraduate students affirmed the usefulness of Internet use for academic and research activities especially for downloading of information for assignment purposes, conducting research, searching and downloading of professional and discipline information, communicating and chatting with colleagues and teachers, and online learning. This corroborates Awoleye and Siyanbola (2006) views that emphasised that Internet resources as valuable resources for academic and research activities by people in the university.

The relationship between institutional factors and Internet use was found to be significant and positive. This is in line with Baguchi and Udo (2007) that emphasised

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institutional factors as determining the adoption and use of Internet in developing countries. In summing up, the study revealed that institutional factors do influence Internet use by postgraduate students in universities to a great extent.

Conclusion

This study evaluated the relationship between institutional factors on the use of Internet by the postgraduate students of Faculty of Science, University of Ibadan. The study concluded that institutional factors do make significant contribution to the use of Internet by the postgraduate students in the Faculty of science, University of Ibadan.

It can also be concluded from the study that the postgraduate students have a positive perception toward the usefulness of Internet for academic and research acticvities which may be as a result of the fact that the Internet is able to meet their information, academic and research needs at every point in time. The usefulness of Internet for students' research, academic, and communication activities was established.

Recommendations

The following recommendations were made:

a) There should be adequate orientation on the content, adequacy and relevance of the Internet and Internet resources to the academic and research activities of the students. This will ultimately encourage the students' regular use of the Internet.

b) The management of the University should ensure the adequate provision of appropriate institutional factors in terms of adequate policies framework, steady power supply, reliable Internet connection etc to ensure that the Internet is always available for use always

c) The cost of accessing the Internet should be made affordable to the students..

d) There is also the need for the provision of a good policy environment for the effective use of the Internet facility by the students

e) The authority of University of Ibadan should ensure the provision of adequate infrastructural facilities to ensure effective performance of the Internet facility in terms of speedy access, fast retrieval and easy download of information resources.

f) There should be provision of adequate access points for the students to enable them make effective use of Internet.

g) There should also be training and retraining of the students in other to develop their computer literacy skills, Internet use competency, level, Internet self-efficacy skills, as well as information search and retrieval skills. Such training should focus on developing the information literacy skills and Internet use skills of the students.

References

Abolade, A.O., & Yusuf, M.O. (2005). Information and Communication Technology (ICTs) and the Nigerian Teacher Education Programme. *African Journal of Educational Studies* 3(1): 1-19.

Adams, S.T. (2003). A strategy for technology training as part of a Masters program conducted at a school site. *Journal of Technology and Teacher Education,* 13(3): 493-514.

Adeogun, M. (2002). The Digital divide and university education systems in sub-saharan Africa. *African Journal of Library Archival and Information Studies* 13(1): 11-20.

Adeoye, F. T. (2004). Appling the technology acceptance model and flow theory of online consumer behaviour. *Information Systems Research*, 13(2): 205-223.

Adogbji, B., & Akporhonor, A.B. (2005). The impact of ICTs (Internet) research and studies. The experience of Delta State University students in Abraka, Nigeria. *Library HiTech News*, 1(10): 17-21

Ajayi, G.O. (2002). Some aspects of information communication technology development in Africa. Retrieved from http//www.teret.res.in/commsphere/58.1pdf

Alhaji, R. (2007). Are individual differences germane to the acceptance of new technologies? *Decision science* 30(2): 361-391.

Al-heala, A.M. (2001). *Gautong on Line (GOL) Educational plan implementation strategy supporting documentation*. Unpublished supporting documentation. 12p

Anderson, J. (2004). IT, e-learning, and teacher development. *International Educational Journal* 5(5): 1-14.

Anderson, N., & Baskin, C. (2002). Can we leave it to chance? New learning technologies and the problem of professional competence. *International Educational Journal,* 3(3): 126-137.

Aramide, K.A., Gbotosho, A.S, and Sote, A. (2011). Influence of demographic and environmental variables on Internet use by students of University of Ilorin, Nigeria. *International Journal of Library Science*, 4(A11): 121-141

Asain, A., & Kolia, N. (2006). An analysis of students' attitude towards Internet: current development in technology-assisted education. International Journal of Science Education 22(8): 797 - 817

Awoleye, O.M., & Siyanbola, W.O. (2006). Examining the level of penetration and impact of Internet usage amongst undergraduate in Nigerian universities: case study approach. *Current Developments in Technology-Assisted Education* 12(4): 12-22

Ayo, C.K. (2001). *Information Technology: Trends and applications in science and business* Lagos: Concept Publication Limited: 81-89

Bates, M.E. 2000. The Internet: part of a professional searcher's toolkit. *Education and Information Technology* 21(1): 47-52.

BECTA. (2003). *What the Research says about using ICT in Maths*. UK: BECTA ICT Research: 15

Beuke-Amiss, C.M., & Chiwara, E.R.T. (2006). The impact of diffusion of ICTs into educational practices: How good or how bad? A review of the Namibia situation. Available at http://www.dsapce.unam.na:8443/dspace/bitstream/1995/244

Brosnan, M.J. (2000). The impact of computer anxiety and self-efficacy upon performance. *Journal of Computer Assisted Learning*. 14(3): 223-235.

Chain, A. (2005). When technology tails to deliver (communication). Available at http://www.gravity7.com/article-investigation19.html

Choe, V. (2003). The use of the Internet by teaching staff of the University of Zambia. *African Journal of Library, Archives, and Information Science*, 13(2): 119-132

Daniel, A. (2001). The World Wide Web is in the midst of boom with many brand new websites appearing each day. Available at http://interface.free.fr/archival/IBM_Web_Guide_lines.pdf.

Forgasz, H.J., & Prince, N. (2002) Software used for mathematics learning-reporting on a survey. *Vinculum* 39(1): 18-19.

Hawkins, R.S. (1999). Ten lessons for ICT and Education in the developing world. In *The global information technology report 2001-2002: Readiness for the networked world,* Kirkman, G., et al. (Eds.) Available: http://cyber.law.harvard.edu/itg/libpubs/gitrr2002_ch04.pdf

Jiang, J.J., Hsu, M.K., Klein, G., & Lin, B. (2000). E-commerce user behaviour model: An empirical study. *Human Systems Management*, 19(1): 265-276

Kirk, M., & Zander, C. (2004). Narrowing digital divide: In search of a map to mend the gap. Journal of Computing Sciemces in Colleges, 20(2), 168-175

Kirschner, P and Selinger M. (2003). The state of affairs of teacher education with respect to information and communication technology. *Technology Pedagogy and Educatioin* 12(1): 5-17.

Kumeler F., Kommers D., & Kotsik, A.M. (2004). Factors associated with the use of Internet and benefits obtained by users. *Educational Technology Research and Development,* 45(1): 19-50.

Kwom, T.H., & Zmud, R.W. (1999). Unifying the fragmented models of information systems implementation. In Boland, R.J., & Hirschein, R.A. (Eds). *Critical issues in information systems research*. New York: Wiley: 227-251

Lee, A., Lin, C., & Pai, C. (2005). The Internet in lifelong learning: Liberation or alienation? *International Journal of Lifelong Education*, 18(2): 1-19

Liaw, S.S. (2002). An Internet survey for perceptions of computers and the World Wide Web: Relationship, prediction and difference. *Computers in Human Behaviour* 18, 17-35.

Lishan, F. (2004). Innovations in reference service delivery: e-reference international conference on spanning the digital divides: The development of digital libraries, November, 6-7, Manila.

McGugain, N. (2001). The relevance of vendors' usage statistics in academic library e-resource management: A New Zealand study. *Australian Academic and Research Libraries* 35(4): 32-43.

Meso, A., Musa, P., & Mbarika, Y. (2005). Towards a model of consumer use of mobile information and communication technology on LCDs: the case of Sub-Saharan Africa. *Information Systems Journal*, 15: 119-146.

Molosi, K. (2001). Making the Internet work for Africa. *Computers in Africa*, Oct/Nov: 37-38

Nertha, K.N. (2007). *Technology adoption and integration: A descriptive study of a higher education institution in a developing nation*. Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Nicolle, P.M. (2005). *Technology adoption into teaching and learning by mainstream university faculty: A mixed methodology study revealing the how, who, why, and why not*. Unpublished doctoral dissertation, Louisiana State University, Baton Rouge, LA.

Oletu, F. (2007) ICT as a tool for development retrieval. Available: http://www.newage-online.com/news.

Ololude, N. (2006) Appraising the relationship between ICT usage and integration and the standard of teacher education programs in a development economy. *International Journal of Education and Development Using ICT*. Available at http://rjedict.dec.uwi.edu/vicwarticle. accessed 10 January 2010.

Oniyide, D.B. (1998). The Internet and World Wide Web as resources for teaching and learning in schools. In Elaturoti, D.F. (Ed.). *Nigerian school librarianship: Yesterday, today, and tomorrow*. Ibadan: Nigerian School Library Association: 99-106.

Robertson, T.S., & Gatignon, H. (2006). Competitive effects on technology diffusion. *Journal of Marketing*, 50: 1-12

Shaw, W. (2000). The use of the Internet by English academics. *Information Research,* 42. Available: http://information.net/ir/4-2/isic/shaw.html

Usum, T.R. (2003). Internet subscription in Africa: Policy for a dual digital divide. *Telecommunications Policy*, 27: 61-74. Available: http://www.com.washington.edu.ict4d/20060128_182200pdf.

Zakon, G.G. (1999). Global Internet statistics: Sources & references. Available: http://www.glreach.com/globstats/refs.phps