



Institutional Factors Influencing Internet Use among Postgraduate Students in Nigerian Universities

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Abstract

The influence of institutional factors (adequacy of computers in ICT centres; internet facilities and wireless access points; enabling Internet policy for students; administrative and technical support; conducive ICT environment; reliable internet connectivity; provision of steady power supply; internet training for students; cost of accessing Internet and privacy concern) on the Internet use among students' in selected universities in South-West region of Nigeria was investigated. A survey was conducted from April 2018 to May 2018. A validated and pre-tested questionnaires, as the instrument for data collection, were distributed to 475 respondents in University of Ibadan (UI), Ladoké Akintola University of Technology (LAUTECH) and Bowen University. The data was analyzed using Statistical Package for the Social Sciences (SPSS) version 20. Findings revealed that “adequacy of computers in ICT centres ($\beta = -0.187, p = 0.017$)” and “internet speed ($\beta = -0.324, p = 0.002$)” had significant indirect influence on Internet use by respondents from University of Ibadan while “cost of internet access ($\beta = 0.148, p = 0.041$)”, “students training ($\beta = 0.211, p = 0.012$)”, “reliable internet connection ($\beta = 0.241, p = 0.027$)” contributed directly to daily Internet use of the respondents. In LAUTECH, “cost of Internet access ($\beta = -0.298, p = 0.038$)” had significant indirect influence the postgraduate Internet use. In Bowen, “cost of internet access ($\beta = -0.336, p = 0.006$)”; “inadequate access point ($\beta = 0.302, p = 0.016$)”; “inadequate power supply ($\beta = 0.234, p = 0.048$)” and “policy support ($\beta = 0.391, p = 0.003$)” significantly influenced the daily use of the Internet by the respondents. The study concluded that institutional factors do make significant contribution to the use of Internet by the respondents of the three selected universities. These findings provided some useful insights into those institutional factors that promote the use of the Internet by the postgraduate students of the selected universities, for governments and university administrators. In view of these findings, the study recommended, among others, that university authorities need to ensure adequate provision of appropriate institutional factors in terms of “adequate access points”, “steady power supply” (alternative) and “reliable Internet connection”.

Introduction

The Internet, electronic communication environment built on the basis of the worldwide computer network, is a channel for wide dispersal of information and collaboration between people separated by geographical distance (Linear, Cerf, Clark, Kahn, Kleinrock, Cynch, Postel, Robert and Wolff, 2010). The Internet is also the gateway for information centres and libraries to electronic information resources and provides information generated by different organizations, institutes, research centres, and individuals all over the world. Prior research on internet use among students of higher learning shows that a significant number of students used the Internet for variety of purposes such as academic related information, knowledge enhancement, social communication and entertainment (Ansari, 2006; Bashir, Mahmood and Shafique (2008); Mishra 2009; Muniandy (2010); Ani, 2010; Ivwighreghweta and Igere 2014). Ansari (2006) suggests that majority of students from four colleges of Kuwait University used the Internet to communicate with colleagues but slow speed, lack of time and lack of access from home are the major constraints. Bashir, Mahmood and Shafique (2008) posit that students of the University of the Punjab, Lahore, Pakistan made use of the Internet for course related reading and research needs. Only a quarter of the students used it for entertainment purpose. The study reveals that ease of work and time saving was the reasons of Internet use among students. In another study, Mishra (2009) suggests that 60.8% of the respondents from University of Maiduguri emphasized the importance of the Internet to their study; 74.6% used the Internet for research; 71.5% preferred Google as their search engine and recommended that necessary facilities should be put in place for students to make optimal use of information resources available on the Internet.

Among scholars, the significance of Internet technologies and resources in education sector is indispensable (Omagbemi, Akintola, and Olayiwola, 2004). Typically, in most university campuses, students have access to the Internet almost any time and almost anywhere on campus through institutional wireless facilities or directly from commercial internet providers. Since its emergence in 1990s, the Internet has been a major global tool with capacity to provide data and information for teaching, learning and research. The Internet provides access to the most diversified source of information hosted by individuals and various organizations world-wide on a vast network of servers (Ogungbeni, Adekanye, Bamigbose and Sulaiman, 2016). Furthermore, the Internet offers students the possibility to acquire knowledge without time and space constraints. It is an excellent academic resource and contains wealth of useful, easily accessible information for students of higher education in all disciplines across the globe. It is a functional tool that has immensely changed the way students interact with others and shared information with respect to their studies. The Internet is used by students to accomplish a range of academic related activities: prepare course assignments, prepare study notes, conduct self-tutorial with specialized multimedia, research activities, exchange emails with lecturers, peers, and remote experts and access

electronics library catalogs, bibliographic databases, and other academic resources in text, graphics, and imagery (Luambano and Nawe, 2004). Other contemporary use of the Internet by students includes entertainment, purchasing and dating.

Several factors that encourage or hinder Internet use in different setting have been identified by researchers in literature. These factors have been classified as personal/individual, institutional/organizational and system/technology factors (Buabeng-Andoh, 2012; Zabukovsek, and Bobek, 2013). Anandarajan, Igbaria and Anakwe (2002), in a study of 143 computer users in Lagos Nigeria, revealed that perceived usefulness and perceived enjoyment did not motivate users to accept the microcomputer but organisational support and social pressure. Also, supporting ICT infrastructures including adequate internet connectivity and institutional methodologies and policies in enhancing access and use have been found to influence ICT use (Baguchi and Udo, 2007; Ynalvez, M. & Shrum, W. 2011; Kashorda and Waema, 2014). Alhaji (2007) suggests that cost of Internet access was the most prevalent institutional constraint to the Internet use in Nigeria, out of the three categorized institutional factors namely costs, connectivity infrastructure and physical infrastructure of the Internet. In the same vein, Oyelaran-Oyeyinka and Lal (2003) in a study on internet diffusion in Africa reveal that 43.2% university lecturers in Kenya have access fees paid by their university while only 13% of their counterparts in Nigeria had internet access fees paid by their university resulting in high use of cyber cafes. Though, internet is available in Nigeria at a fee however, it is still very expensive by local standard. Studies have also shown that Internet usage by students would improve if universities organized training on its use and skill acquisition; offered free Internet services, improved accessibility, increased computer systems connected to the Internet and increased in access points (Ibegwam, 2004; Ololube, 2006; Nwokedi, 2007). Aderibigbe and Aramide (2012) identified some institutional factors that could predict the use of the Internet by the postgraduate students in University of Ibadan namely “availability of adequate rules and regulations”; “adequacy of infrastructural facility” to support Internet use; provision of “conducive ICT environment”; “adequate policies” to support ICT use in academic work and “availability of adequate computer accessories” while on the other hand “inadequate provision of access points” for Internet use and “high cost of Internet access” as institutional factors that hindered Internet usage. In the same vein, Otunla, (2013) and Ivwighrehweta and Igere, (2014) posit that “inadequate internet facilities”, “slow internet speed”, “unreliable power supply” were some of the problems impeding effective internet access and usage among students

Various factors that influenced adoption and usage of Information Technology (IT) and the Internet have been categorized as personal/individual, institutional/organizational and system/technology factors (Buabeng-Andoh, 2012; Zabukovsek and Bobek, 2013), however none of these studies focused on postgraduate students. This research investigated institutional factors influencing the use of the Internet technology by postgraduate students’ of the University of Ibadan,

LAUTECH and Bowen University. Institutional factors in the context of this study are range of conditions including technical infrastructure provided by universities to support the use of internet technology. Institutional factors have been found to influence the use of various ICT in different settings (Anandarajan, Igarria and Anakwe, 2002; Angello and Wema, 2010; Buabeng-Andoh, 2012). Institutional variables (including “steady supply of electricity”, “availability of institutional computer laboratory and cybercafé”, “adequate access points”, “reliable connectivity”; “cost of Internet access”, “Internet speed (bandwidth)”, and “institutional skills acquisition program” among others) have been found to influence Internet access and use among different categories of users (Aderibigbe and Aramide, 2012). However, there has been dearth of research on the influence of institutional factors on Internet use of students by postgraduate students in Nigeria universities. This study aims at filling this knowledge gap in the three universities: University of Ibadan (UI), Ladoke Akintola University of Technology, Ogbomoso (LAUTECH) and Bowen University, Iwo (BUI).

University of Ibadan acclaimed first university in Nigeria, is a Federal-Government owned tertiary institution of learning; it was established in 1948 as a college of the University of London. A major landmark in establishing the university network infrastructure was marked by collaboration with the John D. Catherine and T. MacArthur Foundation in 2003 that funded the installation of Internet connectivity backbone in the university main campus. Subsequent expansion projects have since been embarked upon by the university management to distribute and interlink all faculties on campus through fiber optics cabling and wireless technology (University of Ibadan ICT Unit report, 2014 & University of Ibadan Library Report, 2014).

The LAUTECH) - owned by Oyo State and Osun State government established in 1990. The researchers’ observation during a research visit to the institution in the course of this study revealed that the institution has Internet bandwidth on fibre and VSAT links and there has been Internet service for the members of university community since 8 March 2007. There is also free access to campus wireless hotspot service popularly called LAUTNET for students. As at the time of this study, effort is being made by the university management to expand internet infrastructure in the university (www.lautech.edu.ng).

The BUI is a private institution owned by the Nigerian Baptist Convention and established on 17 July 2001, but started academic activities on 4 November 2002. In 2005, the a digital centre was established for staff and students in order to support teaching and learning programmes of the university. The centre started with 150 Internet-ready desktop computer systems connected to the Internet and each faculty has internet room for students’ use. To guarantee adequate access, all students are allotted two hours free access to the Internet per week because of limited number of space at a time, with opportunity for additional hours at a subsidized cost (Otunla, 2013).

Conceptual Framework

The conceptual model for this study, as shown in figure 1, suggests that postgraduate students’ Internet use is affected directly by institutional factors including: adequate number of computers in ICT centres; adequate internet facilities (wireless access points); enabling Internet policy for students; administrative & technical support; conducive ICT environment; reliable internet connectivity; provision of steady power supply; internet training for students; cost of accessing Internet and privacy concern.

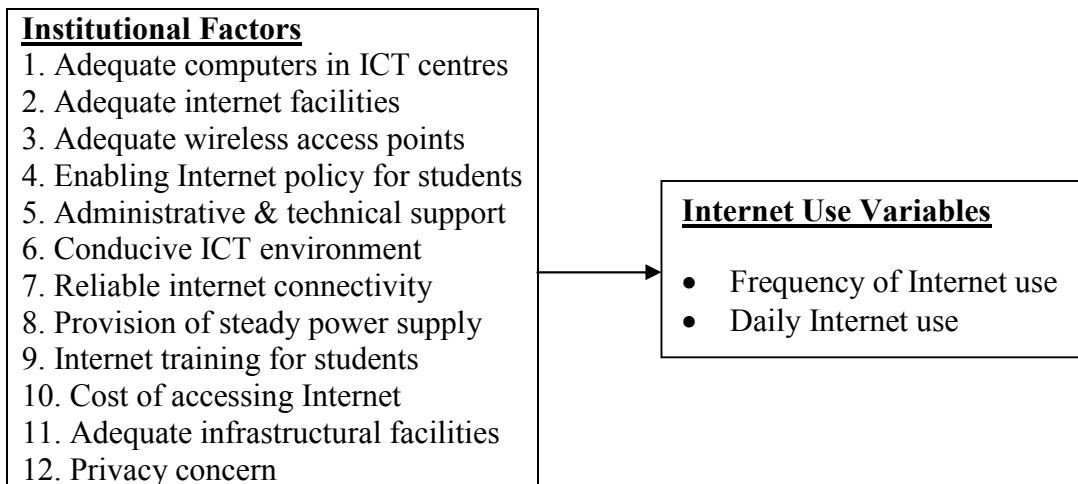


Figure 1: Conceptual model

Source: Modified from Teo (2001)

Research Question

The following research questions guided the study:

1. What institutional factors influenced the Internet use by postgraduate students in the three selected universities?
2. What barriers are significant to the use of the Internet by postgraduate students in the selected universities?

Methodology

This study adopted the descriptive survey design. The study population consist of 3,855 postgraduate students from four faculties that were common to the selected universities namely: Agriculture, Sciences, Social Sciences and Technology/Engineering. The respondentsselected include Postgraduate Diploma, Master of Engineering, Master of Science, Master of Philosophy and Doctor of Philosophy students enrolled in the selected universities and have spent at least one semester of studies.A combination of purposive and convenience sampling technique was used to select 384 students out of 475 administered questionnaire, which was 80.8% of the sample.The characteristics of the sample are as follow:54.5% of the respondents were from University of Ibadan, 23.3% of the respondents from LAUTECH, and 22.3% of the respondents were from Bowen;66.4% were male, while

females were 33.6% in University of Ibadan; 73.4% were males and 26.6% were females in LAUTECH; while 43.2% were males and 46.8% were female in Bowen University. As evident, 46.4% of the respondents from UI were aged between 28 and 37 years; 58.9% from LAUTECH were aged between 18 and 27 years; and 46.7% of the respondents from Bowen were aged between 28 and 37 years. So majority of the respondents from LAUTECH were younger than respondents from UI and Bowen. In addition, with respect to level of study, 15.5% of the respondents were PhD degree students, 8.2% were M.Phil./M.Phil./ PhD students while 75.9% were master's students in UI. In LAUTECH, 5.3% of the respondents were PhD students, 3.2% were M.Phil./M.Phil./ PhD, and 54.3% were Master's students. In Bowen, 10% of the respondents were PhD students, 31% were M.Phil./M.Phil./ PhD and 48% were master's students. Lastly, the respondents were asked years of experience using the Internet: In the University of Ibadan, 9 (1.4%) of the respondents had used the Internet for less than two years; 12 (5.5%) had used it three to five years, 44 (20%) had used it six to eight years; 65 (26.9%) had used it nine to eleven years and 96 (43.6%) had used it twelve years and above. In LAUTECH, 28 (29.8%) of the respondents had used the Internet for six to eight years; while in Bowen University, 47 (52.2%) had used the Internet for six to eight years.

A validated and pre-tested questionnaire was the instrument used and it consists of demographics section, institutional factors section and Internet use section. The questionnaire adopted the four point liker scale technique for answering questions. Each degree of agreement or disagreement is given a numerical value from four to one (strongly agreed (4), agreed (3), disagreed (2) and strongly disagreed (1). Negative questions were recoded based on the research objective. The reliability of the questionnaire was assessed using the CronbachAlpha method. The reliability coefficient values obtained for institutional and Internet use were 0.76 alpha and 0.79 alpha respectively. Simple percentage, frequency, means and multiple regressions were used to analyse the data using SPSS 20.0.

Results and Discussion of Findings

RQ1: What Institutional Factors influenced the use of the Internet by the postgraduate students in the three selected universities?

Multiple regression analysis was conducted to examine the institutional factors that significantly influenced/predict respondents' daily Internet use in the three selected universities. The beta values in Table 1 indicated the relative influence of the independent variables (institutional factors) individually on the dependent variable (Internet use). Negative beta values implied the dependent variable (Internet use), on average, will reduce by an amount equal to the beta value for a unit change in the independent variable.

In UI, the result showed "Provision of computers in ICT centres ($\beta = -0.187$, $t = -2.419$, $p = 0.017$); Internet access speed ($\beta = -0.324$, $t = -3.114$, $p = 0.002$); cost of internet access ($\beta = 0.148$, $t = 2.056$, $p = 0.041$); students training ($\beta = 0.211$, $t = 2.527$,

p = 0.012); reliable connection ($\beta = 0.241, t = 2.222, p = 0.027$) and policy support ($\beta = -0.185, t = -2.267, p = 0.025$) had significant influence on Internet use by postgraduate students of University of Ibadan.

This implied that the Internet use by the postgraduate students would reduce by 18.7% and 32.4% for a unit change in ‘provision of computers in ICT centres’ and ‘internet speed’ respectively.

In LAUTECH, cost of Internet access had significant indirect influence ($\beta = -0.298, t = -2.120, p = 0.038$) on the Internet use of postgraduate students. This implied that the Internet use by the postgraduate students would reduce by 29.8% by a unit upward change in cost of access variable.

In Bowen, cost of internet access ($\beta = -0.336, t = -2.837, p = 0.006$); inadequate access point ($\beta = 0.302, t = 2.468, p = 0.016$); inadequate power supply ($\beta = 0.234, t = 2.012, p = 0.048$) and policy support ($\beta = 0.391, t = 3.068, p = 0.003$) significantly influenced the daily use of the Internet by the postgraduate students

Table 1 : Regression Coefficient analysis of Institutional Factors to Internet use of Respondents

	UI		LAUTECH		BUI	
	Beta	t	Beta	t	Beta	t
(Constant)		0		0.001		0
Provision of computers in ICT centres	-0.187	0.017	0.155	0.309	0.03	0.803
Cost of access*	0.148	0.041	-0.298	0.038	-0.336	0.006
Student training	0.211	0.012	-0.194	0.289	0.128	0.328
Internet infrastructure availability	-0.039	0.662	0.311	0.059	0.082	0.552
Adequate access point	0.071	0.326	0.039	0.788	0.302	0.016
Provision of adequate power supply	-0.016	0.849	-0.008	0.962	0.234	0.048
Reliable connection	0.241	0.027	0.186	0.349	0.09	0.507
Administrative & technical support	0.101	0.265	-0.140	0.425	-0.089	0.525
Internet access speed	-0.324	0.002	0.250	0.182	0.125	0.344
Conducive environment	0.03	0.716	-0.302	0.080	-0.08	0.511
Privacy concern v	-0.02	0.804	0.055	0.762	0.139	0.217
Adequate policy to support ICT use for academic work	-0.185	0.025	-0.028	0.844	0.391	0.003

Research Question 2: What barriers are significant to the use of the Internet by postgraduate students in the selected universities?

Respondents were provided with a checklist of barriers they considered significant to their use of the Internet in their various universities. Results are presented in figure 2.

In UI, 91% of the respondents identified power interruption; 87% indicated high cost of internet access; 71% indicated “need to pay to get most academic materials” and 60% indicated lack of facilities as the most significant barriers. For respondents from LAUTECH, 90% identified power interruption; 78% indicated high cost of internet access; 74% indicated lack of facilities and security concerns and finally 58% indicated “Need to pay to get most academic materials” as the most significant barriers. In Bowen, 88% indicated power interruption; 87% identified lack

of knowledge and 87% indicated lack of facilities (laptop, etc.) and 83% of the respondents indicated “security concerns” as most significant.

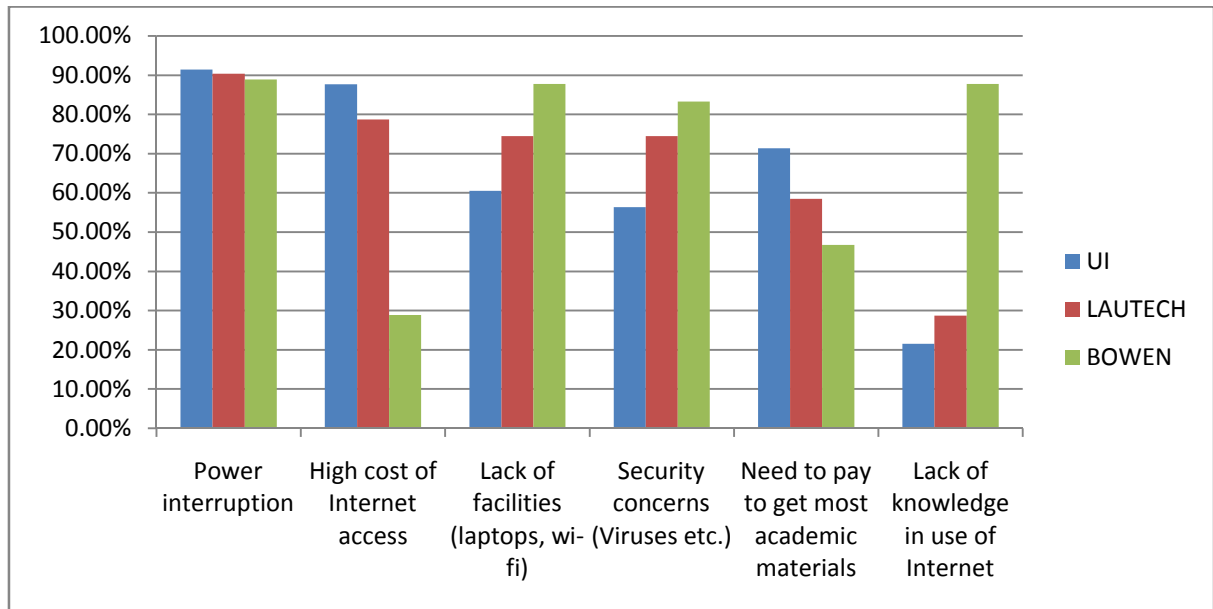


Figure 2 Significant barriers to Internet use per university

Discussion

The study investigated the institutional factors which had significant influence on the Internet use of postgraduate students in selected universities. Finding from the study revealed that the Internet use would improve with adequate provision of computers in ICT centres and significant improvement in internet access speed. This is consistent with studies by Aderibigbe et al, 2012 and Ynalvez, M. and Shrum, W. (2011). The findings further also showed “cost of internet access”, “students training”, “adequate policy to support ICT use for academic work”, “provision of power supply” and “reliable connection” significantly influenced the daily Internet use by postgraduate students in the selected universities. This finding is paralleled with previous studies (Alhaji, 2007; Aderibigbe et al, 2012 and Kashorda and Waema, 2014).

The findings from the study also revealed significant barriers associated with Internet use by the postgraduate students in the selected universities. The most significant barriers identified by postgraduate students across the three selected universities collectively, in order of severity, were power interruption, high cost of internet access; lack of facilities like laptop, and security concerns. This is in consistent with Alhaji (2007) study which posited that connectivity infrastructure, costs, and physical infrastructure were as institutional constraints to the use of Internet in Nigeria.

Conclusion and Recommendations

The result showed institutional factors namely adequate computers in ICT centres, reliable internet connection, cost of access and internet speed had significant influence on the use of Internet by the respondents in the selected universities. The study concluded that the findings provided a practical scenario of the use of Internet by the postgraduate students of the selected universities. Consequent upon the above conclusion, the following recommendations are hereby made: The authority of University of Ibadan should give adequate attention to appropriate institutional factors in terms of adequate access points, steady power supply (alternative), reliable Internet connection and fast internet speed to enhance optimal Internet use. The authority of Bowen University should also ensure the adequate provision of needed institutional factors in terms of adequate facilities to support Internet use for students' academic works among postgraduate students. Efforts should be made by the University management to alleviate the identified barriers to using the Internet effectively by the students in all the selected universities.

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