

## Utilisation of Internet Services and Its Impact on Teaching and Research Outputs in Private Universities in South-Western Nigeria

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### Abstract

This study investigated the utilisation of Internet services and their impact on teaching and research output in two purposively selected private universities in South-Western Nigeria. Both quantitative and qualitative methods were used for data collection. Questionnaires were administered to 214 academic staff, selected through simple random sampling technique. In-depth interviews complemented the quantitative data. The utilisation of Internet services aided 54.3% of the respondents to publish their works, 61.6% to attend conferences and 74.2% to teach. Two thirds of the respondents reported that the utilisation of Internet services had also improved their quality of teaching (77.5%) and research output (79.1%). Most of the respondents used Internet services to meet the requirements for career advancement, especially promotion. Internet services or facilities were found to have contributed to the increase in teaching and research outputs of academic staff of the universities in the study and had the potential for enhancing the teaching and research outputs of respondents in the future.

**Keywords:** Internet – Internet Facilities – Information and Communication Technology – Academic Staff – Private Universities – Research Output

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### **Introduction**

The world is fast becoming a global village, and this is claimed to have been facilitated by the Internet and other information and communication technologies (Bamiro, Oluleye & Tiamiyu 2005; Obilor 2004; Onimode 2000). The advent of the Internet has been seen as one of the major exciting events in the second half of the 20<sup>th</sup> century. The reason the Internet seems this significant is because it contains the biggest resource for information in the entire world and enables people to utilise an interactive mechanism to constantly communicate with each other. As Bussiek (2005) has noted, the spread of the Internet is an unprecedented success story in the history of communication as compared to radio, which took 38 years to reach more than 50 million users, and television which took 23 years, the Internet is said to have spread to 50 million users within only 5 years.

The growing relevance and speed of information retrieval in all aspects of human life is considered vital to development in countries the world over. With the current information explosion, and the clamour for digital libraries, users can source and utilise information with less stress (Okoro & Okoro 2006). The tremendous growth of the Internet and the World Wide Web is said to have revolutionised communication, so much so, that the ancient dream of “a scholar who knows all things happening in the world without venturing outdoors” has finally become a reality (Ololube 2005).

The rapid changes taking place in the world economy and industrial development have been driven by three technological waves: information technology, technology, and materials. Of these, according to Ajayi (1996), information technology has the greatest influence on virtually every aspect of human activities. The Internet, in particular, has been considered to have revolutionised the way people collaborate and communicate through the global services it offers. Such services include electronic mail, file transfer protocol, Gopher, Wais and Telnet, to mention but a few (Osofiyan 1996).

In spite of the rapidly changing world economic order, several studies (Ajayi 1996; Nwagwu & Agarin 2007; Singh 2002) have pointed out that the African continent is still lagging behind because of its existing poor infrastructure, and its unique socio-economic, cultural and political situations – all of which pose major obstacles to the introduction and implementation of new technologies for Internet workings. Similarly, Nwagwu and Agarin (2007) have observed that there is a paucity of empirical studies regarding the influence of Internet services on teaching and research outputs (publications and conference attendance) in Nigeria. This is important because the application of Internet services on other sectors such as banking, medicine, agriculture, communication, has been previously documented (Onwubiko 2004; Tsubira & Kyeyune 2001; Yusuf 2006). Conversely, evidence abounds regarding the impact of Internet services on research activities and other academic exercises in developed and industrialised societies of the world (Slabbert 2006; Udoh 2001; Ughegbu 2001).

As some scholars have noted, the academic communities of North America, Japan and Europe are becoming increasingly reliant on the use of information and communication technology, particularly, computer and Internet facilities, in promoting research activities for subsequent national development (Udoh 2001; Ughegbu 2001). Thus, it is evident that for

Nigerian universities and academia to participate in contemporary international ICT development – in terms of the utilisation of Internet services for teaching and research activities – the academic community must go beyond just the use of email and browsing on the Internet to utilising other packages like e-workshop, e-conferencing, and e-learning opportunities which can facilitate, speed up and improve the quality and quantity of teaching and research activities.

This study became necessary for the following reasons. Firstly, because of the 2006 World Universities' Rating, which was principally based on the amount of research output on the web, indicated that no Nigerian university was listed among the first 6,000 universities in the world (Adeyeye 2006). Secondly, because most of the private universities in Nigeria were established at the very time Internet facilities were diffused into developing countries like Nigeria. Proprietors of these private universities undertook massive investment in the acquisition of Internet technology and its facilities, as a means to enhance their competitive advantage over public universities and to facilitate the process of teaching and research activities for their academic staff. These reasons thus provided the impetus for the current study, which investigated the utilisation of Internet services on teaching and research outputs in private universities in South-Western Nigeria

Babcock University (BU), one of the study areas, started as the Adventist College of West Africa (ACWA) on September 17, 1959. The University is fully owned and operated by the Seventh-Day Adventist (SDA) Church, and is registered under the laws of the Federal Republic of Nigeria to operate as a private university and, as such, does not receive any government grants. The ACWA, as a senior college, awarded the first set of Bachelor of Arts degrees in Theology under its own name in 1966 and by 1975 made history when it became the premier institution to sign and operate an affiliation agreement with Andrews University, Berrien Springs Michigan, USA. This relationship enabled it to train students and award Bachelors' degrees from Andrews University, primarily in Biology, Business Administration, Theology, and Religion with minors in Biblical Languages, Biology, Business Administration, History, Religion and Secretarial Studies. Also, in 1975, the name Adventist Seminary of West Africa (ASWA) was adopted in response to the dynamics of its socio-political environment and in 1988 ASWA reached the second milestone in its academic history in an affiliation agreement with the Seventh-day Adventist Theological Seminary of Andrews University which authorised the college to offer Master of Arts programmes in Pastoral Ministry. The MA Religion programme was later added in 1990. Both programmes were upgraded from part-time to resident status in 1992 but later reverted to summer sessions again in 1997 due to the unsuccessful search for qualified full-time teaching staff. A stop-gap measure was meanwhile taken to afford national recognition for its status and programmes by way of the institution's request for a local Affiliation agreement with the University of Ibadan (UI) under the name "Babcock College." The request was still clearing the tedious hurdles of UI administrative process when Babcock University (BU) received its own accreditation on April 20, 1999 as a privately-owned university. The vision of the university is to be "A first class, faith-based, Seventh-day Adventist institution building servant-leaders for a better world", and with the mission of "Building people for leadership through quality Christian education, transforming lives. Impacting society for positive change through the pervading influence of our graduates in service toward humanity" (Imhonopi 2010). At the time of this research, there were cybercafés/ICT centres located within and outside the school campus where Internet services were available for both students and staff.

Covenant University (CU), another of the study areas, was founded by the Living Faith Church Worldwide (also known as Winners Chapel) under the leadership of Bishop David

Oyedepo and received its licence to operate as a privately-owned university from the Federal Government of Nigeria in 2002. The university is located in Ota in a suburb of Ogun state in South-Western Nigeria. CU was founded on Christian mission ethos and committed to pioneering excellence at the cutting-edge of learning (Imhonopi 2010). The university is also driven by the compelling vision of raising a new generation of Leaders for the African Continent on the platform of a holistic, human development and integrated learning curriculum, in order to raise "Total Men" who would go out to develop their world based on the core values of spirituality, positive mentality, capacity building, integrity, responsibility, diligence and sacrifice. The mandate of the university is to revolutionise the educational landscape of Africa and is to be piloted by Christian ethos and life transforming values. The vision statement of the university summarises its strategic intent: "To be a leading World-Class Christian Mission University, committed to raising a new generation of leaders in all fields of human endeavour" with the mission, "To create knowledge and restore the dignity of the black man via a Human Development Total Man Concept driven curriculum employing innovative, leading-edge teaching and learning methods, research and professional services that promote integrated, life-applicable, life-transforming education, relevant to the context of science, technology and human capacity building" (Imhonopi 2010). At the time of research, the university was well connected with Internet technology and other modern information and communication facilities. It also had a special ICT centre where students and staff had access to Internet facilities.

Thus, this paper, an excerpt of a larger study, investigated the impact which the use and ability (technique) of Internet services had on the teaching and research outputs of academics of the selected universities. Specifically, the study was concerned with whether the utilisation of available Internet services had influenced the teaching and research outputs of academics in the study areas as they have been seen to have done in universities located in developed societies. The study also tried to identify if there were other factors which motivated the respondents to increase their research outputs and the challenges they encountered doing so.

## **Objectives of the Study**

The study sought to achieve the following key objectives:

- Ascertain the extent to which academic staff of the selected private universities embraced computer literacy and utilised Internet services
- Examine the extent to which the use of Internet services had affected teaching and research outputs of academic staff at these private universities
- Identify factors that may have affected the research output of these academic staff

The following section outlines the methodology used in this study.

## **Methodology**

The study involved surveying the extent to which computer literacy and utilisation of Internet services affected teaching and research outputs among academic staff at two private universities in Ogun state, Nigeria. In addition to the survey, in-depth interviews were conducted in each of these institutions. The in-depth interviews were used to generate qualitative data to supplement the quantitative data from the survey. This was necessary to elicit information on some aspects of the study which dealt with attitude,

behaviour, individual differences and perceptions of the use of Internet services, the purpose to which they were used and their effects.

### Population and Sample Size

Two private universities in South-Western Nigeria were selected for this study: Covenant University (CU), Sango-Ota, and Babcock University (BU), Ilisan-Remo, both in Ogun state, Nigeria. The total population of the academic staff of the universities at this time was 608. However, 214 academic staff were sampled for the study (see Table 1).

**Table 1: Selection of Sample Size**

Selection of Sample Size			
Names of Universities	Number of Academic Staff	Sample Size Expected	Actual Sample Size
Babcock University (BU)	306	122	106
Covenant University (CU)	302	120	108
TOTAL <i>N</i>	608	242	214

Source: Field Survey, 2008

The sample size was representative of the various colleges within these institutions, taking into consideration the need for gender balance, inclusion of a cross-section of respondents (senior and junior academics) and others. This was done through convenience sampling.

### Sampling Technique

The two universities were purposively selected based on the following criteria: First, the two universities were among the first set of private universities established in South-Western Nigeria. Second, their proprietors had massively invested in the acquisition of Internet technology and there was availability of Internet facilities. Third, the two universities had a relatively stable power supply. Fourth, both of them were considered because they have similar founding philosophies which bordered on academic excellence and promotion of ethics inspired by the Christian faith. And lastly, they both had similar faculties and departments.

### Instrument of Data Collection

Two major research instruments were used to collect quantitative and qualitative data for the study. A questionnaire was used to collect quantitative data while a structured interview was used to collect qualitative data.

### Method of Data Processing and Analysis

Quantitative data were analysed using the Statistical Package for Social Sciences (SPSS), while qualitative data were analysed through content analysis. Where necessary throughout this article, important comments are quoted verbatim.

### Measurement of Utilisation of Internet and Research Outputs

In this study, the utilisation of Internet services represented the independent variable, while teaching and research outputs of academic staff represented the dependent variable. In

measuring the utilisation of Internet services, the estimated number of hours spent weekly on browsing the Internet by individual academic staff was used (Jagboro 2003; Oduwole 2004). Specifically, this was divided into: between zero (0) and seven (7) hours; eight (8) and fifteen (15) hours; and sixteen (16) hours and above. Correspondingly, three categories of utilisers/users were established, namely; low utilisers/users, moderate utilisers/users and high utilisers/users.

On the other hand, the output of members of academic staff was measured using three main criteria as formulated by Singh (2002) and modified by Oduwole (2004). These were: publications (books, chapters in books, referred conference proceedings, monographs/technical reports and journal articles); conference attendance and the use of Internet material for teaching purposes. Based on careful study and harmonisation of the various policies and promotion criteria adopted by the study universities, the following maximum scorable points were attached to these different outputs; *publications* (20 points); *conferences* (10 points) and *teaching* (5 points). On the basis of the total score of each academic staff on the above mentioned items, three categories of output were established. These were: *low output* (between 0 and 35 points); *moderate output* (between 36 and 71 points); and *high output* (72 points and above). The uniformity in the policies and promotions criteria of the study areas suggested that emphasis was placed on publications (journal articles, books, technical reports, and others) while less emphasis was given to teaching. This seems to justify the popular saying within the university system in Nigeria that advises academics to either “publish or perish” (Imhonopi 2010).

The values attached to publications are: books (6 points); chapters in books (3 points); refereed conference proceedings (2 points); monographs/Technical reports (3 points) and journal articles (6 points). Conference attendance is 10 points (three conferences were selected, one for each year for three years). Teaching was assigned a value of 5 points (this was considered once for each year for three years). There was no limit placed on the number of publications, since the universities which took part in the current research study considered publications as the main output of every academic staff every three years, and this criterion was used for promotion consideration.

## **Results and Discussion**

### **Socio-Demographic Characteristics**

Table 2 shows the frequency and percentage distribution of respondents' socio-demographic characteristics such as sex, age, marital status, ethnic group, academic status, highest qualification, and corresponding institutions. Regarding the sex of the respondents, the survey revealed that more male lecturers (71.2%) participated in this study than female lecturers, who accounted for only 28.8% of the sample selected. The age categories of respondents indicated that more academics were in the 30- and 40-year-old age group than 50-years-old and above. Specifically, the survey showed that the highest percentage of academics were aged 40-44 years (31.5%), while the least were within the age categories of 55 years and above (0.7%) and 20-24 years (1.4%) respectively. Data on marital status revealed that 82.8% were married, while only 14.4% were single.

Data on the ethnic origin of the sample showed that respondents from the Yoruba ethnic group (70.0%) dominated the sample. This could be attributed to the fact that the survey was conducted in the South-west of Nigeria, which is predominantly Yoruba-speaking. However, the presence of other ethnic groups is a strong indication of the cosmopolitan

nature of the areas of study. The final category indicates that more academics had Masters degrees (47.0%) than Ph.D. degrees (43.4%).

**Table 2: Socio-Demographic Characteristics of Respondents**

Characteristics	Categories	Frequency	Percentage
<b>Sex</b>	Male	152	71.2
	Female	62	28.8
	<b>Total</b>	<b>214</b>	<b>100</b>
<b>Age</b>	20-24	3	1.4
	25-29	9	4.2
	30-34	34	15.9
	35-39	60	28.0
	40-44	67	31.5
	45-49	23	10.6
	50-54	16	7.7
	55 and above	2	0.7
	<b>Total</b>	<b>214</b>	<b>100</b>
<b>Marital status</b>	Single	31	14.4
	Married	177	82.8
	Separated	3	1.4
	Divorced	3	1.4
	<b>Total</b>	<b>214</b>	<b>100</b>
<b>Ethnic Group</b>	Yoruba	150	70.0
	Igbo	36	16.9
	Hausa	9	4.1
	Southern Minorities	16	7.4
	Foreigners	3	0.8
	<b>Total</b>	<b>214</b>	<b>100</b>
<b>Academic rank</b>	Professor	9	4.1
	Associate professor	17	7.8
	Senior lecturer	43	20.1
	Lecturer 1	36	16.8
	Lecturer 2	48	22.2
	Assistant lecturer	61	28.8
	<b>Total</b>	<b>214</b>	<b>100</b>
<b>Highest qualifications</b>	Ph.D	93	43.4
	M.Sc	101	47.0
	Others	20	9.5
	<b>Total</b>	<b>214</b>	<b>100</b>
<b>Institutions</b>	Babcock University	106	49.5
	Covenant University	108	50.5
	<b>Total</b>	<b>214</b>	<b>100</b>

Source: Field Survey, 2008

### Extent of Computer Literacy and Internet Availability

Table 3 indicates that the majority of respondents were computer literate (94.4%), while only an insignificant percentage claimed they were not computer literate (5.6%). This was based on self-assessment. The implication here is that the majority of academic staff in the study had embraced computer literacy and Internet services. This is a promising finding for the future of Nigeria, if one considers the importance of computer and Internet literacy as the impetus for development and academic relevance in the world, as previously argued by Bamiro et al. (2005) and Bussiek (2005).

With reference to the availability of Internet services, the table also indicates that all respondents agreed that Internet services were available for their use within their institutions, accessible either from Internet centres on their campuses or from their offices.

**Table 3: Extent of Computer Literacy and Internet Availability by Institution**

<b>Computer literacy by Institution</b>				
<b>Are you computer literate?</b>	<b>BU</b>	<b>CU</b>	<b>Total</b>	<b>Percentage</b>
Yes	98	104	202	94.4
No	8	4	12	5.6
Total	106	108	214	100
<b>Internet availability by Institution</b>				
<b>Are Internet services available for your use in your Institution?</b>	<b>BU</b>	<b>CU</b>	<b>Total</b>	<b>Percentage</b>
Yes	106	108	214	100
No	0	0	0	0
Total	106	108	214	100

Source: Field Survey, 2008

In confirmation of this, a junior male lecturer from CU who had access to Internet services said:

I have access to Internet services in my university here and I believe that computer literacy and Internet usage is very important for any serious-minded academic, especially in this age and time. Internet services have made our work easier. Now, one can explore information and share ideas with other scholars in the world. I have been using the Internet for the past five years and the difference is clear now that I am a lecturer and a researcher (Male/2008).

It is important to note here that all the ICT staff of all the study universities that were interviewed agreed that academic staff had access to Internet services; as they either came to the ICT centres to browse or were able to browse in their various offices if there was no system breakdown or server problems.

### **Estimated Hours Spent on Internet Services Weekly**

Table 4 presents the estimated number of hours utilised weekly for browsing the Internet by respondents in their different ranks. Note: The senior category is made up of Professors, Associate Professors and Senior Lecturers. The middle-ranked category consists of Lecturer I and Lecturer II, while the junior category is made up of Assistant Lecturers.

The table portrays that junior academic staff (67.2%) spent relatively more time using Internet services (that is, 16 hours and above a week) than middle and senior academic staff. This finding begs the question, could the reasons for this be that junior academic staff are eager for promotion and career advancement and are therefore more disposed to spending more time on the Internet in their research and teaching assignments than their middle and senior-level colleagues?



**Table 4: Estimated Hours Spent on Internet Services Weekly by Academic Ranking**

Categories	Hours Spent on the Internet Per Week			Total
	0-7 hours Low (%)	8-15 hrs Moderate (%)	16 hrs + High (%)	
Senior	31 (44.8)	19 (27.5)	7 (10.4)	57
Middle	38 (45.4)	35 (43.3)	19 (22.4)	92
Junior	6 (9.8)	18 (29.2)	41 (67.2)	65
Total	75 (100)	72 (100)	67 (100)	214

Source: Field Survey, 2008

A female Senior lecturer from BU clarified this contention by stating that junior lecturers were more inquisitive and more adventurous in the use of Internet services for research purposes than their senior counterparts. To strengthen her argument she said:

Junior lecturers are supposed to be more inquisitive and more adventurous in the use of Internet services for research purposes than the senior ones. You know, a professor may not necessarily engage Internet services in order to publish papers for promotion. If at all he needs to get anything from the Internet, he simply requests for the assistance of junior lecturers. But on the other hand, the junior lecturer wants to explore every opportunity to increase their paper publications and output because they are desperate for promotion and career advancement. (Female/2008).

A Professor from CU further alluded that the reason for the involvement of more junior academic staff in Internet services than their senior colleagues, was a function of what he called a *generational gap*. According to him:

...there is a generational gap. I didn't see any computers until decades after I had finished my Masters. Most of us, especially professors, have already completed our Ph.D. and even become professors before the emergence and popularity of Internet usage in this part of the world. But for those who studied abroad, they may have acquainted themselves with the Internet overseas. So, those of us here find it a little difficult to go through the rigour it takes to learn computer and Internet use now. Meanwhile, most junior academic staff who are also younger in age came into academia at the time information technology has become widespread. (Male/2008)

However, a professor from the same university disagreed with this position. She argued that the late arrival of the Internet for senior academics notwithstanding, since Internet facilities have been found very useful in sourcing material for research and academic purposes, senior lecturers, including professors, just have to embrace it. In her comments she said:

Personally, I wouldn't subscribe to the view that since the professors have reached the peak of their career, most of them no longer use Internet services for academic purpose. For instance, I am a professor and I want to tell you that I typed my Ph.D. thesis by myself because I learnt how to type many years ago before the emergence of modern computers. So, when computers came on board, it wasn't difficult for me to adjust. Even up till now, I still browse the Internet myself and type most of my documents myself. The fact that we are professors does not stop us from carrying out research and keep writing

papers. As a matter of fact, writing papers is easier now than in the past because all the materials you need are there on the net. So it is intellectual laziness that will make a professor think that since he or she has become a professor, Internet facilities should be left to the younger ones who are struggling to be promoted... everybody should therefore embrace it. That's the situation in Western countries (Female/2008).

Thus, to an extent, the findings corroborate the position of Jagboro (2003) and Oduwole (2004) who found that junior members of academic staff spent more time in the utilisation of Internet services than senior members. Although, like one of the interviewees revealed, some senior lecturers were as computer literate and aware as their junior colleagues and used the Internet services for their teaching and research tasks.

### Research Output Prior to the Use of Internet Services

Table 5 shows the percentages of research output of respondents, three years before they began to access and utilise Internet services. The results showed that their output was low, especially for those who published between 0 and 5 books (84.4%), 0 and 5 Chapters in Books (82.2%), and 0 to 5 Technical Reports/Monographs (76.2%). Those who recorded moderate output published between 6 to 11 Journal Articles (43.4%) and attended between 6 to 11 conferences (33.4%).

**Table 5: Research Output of Academic Staff Prior to the Use of Internet Services**

Number of Publications/ Conferences Attended Prior to Internet Usage	Publications Within Three Years Prior to the Use of Internet Services					Number of Conferences Attended
	Books	Chapters in Books	Technical Report/ Monograph	Refereed Conference Proceedings	Journal Article	
0 - 5	84.4%	82.2%	76.2%	70.2%	26.2%	46.1%
6 - 11	15.5%	17.4%	23.6%	29.3%	43.4%	33.4%
12 and above	0.1%	0.4%	0.2%	0.5%	30.4%	20.5%

Source: Field Survey, 2008

Respondents identified certain factors that weighed against their efforts to increase research output. Such factors included: fear of rejection of articles for publication (56.7%), lack of funds (72.6%), unfavourable university guidelines and policies on promotion (53.7%). This result confirms the findings of Olukoju (2002) who also identified some reasons for the decline in research and publishing in Nigerian universities. According to him, the economic and political crisis that befell the country in the 1980s culminated in the adoption of the Structural Adjustment Programme (SAP) in 1986, which impacted negatively on the financial status of many academic staff, thus also negatively affecting their research and publishing efforts. While some academics fled the country and pursued careers overseas, others undertook other vocational pursuits in an attempt to achieve material survival and financial security.

A senior lecturer in one of the study universities lamented about the deplorable state of Nigerian higher institutions. In his words:

Not that Nigerian academics are not brilliant, neither can I say that those abroad write better than us, but our working conditions here are very poor. Take for instance, you come to the office only for you to discover that there is

no electricity for you to work with, and even if you have a deadline to meet in sending a paper for publication, you may not have electricity to type the paper not to talk of sending it via the Internet.... (Male/2008).

The next section highlights the difference in research output after the implementation of Internet services.

### Research Output after the Implementation of Internet Services

Table 6 indicates the publication output of respondents with the advent of Internet services. As argued earlier, it can be seen that there is an emphasis on journal article publications, as 54.3% of the respondents indicated they had published between 12 journal articles and above with the aid of Internet services, in contrast with insignificant numbers of those that had published books or had chapters in books (0.2% and 0.8% respectively). Most of the respondents in the course of their in-depth interviews confirmed that their universities emphasised journal publications because of the associated peer review process, unlike books or chapters in books, which might not be subjected to the same review process. On the whole, when comparing the research output of respondents before (Table 5) and within three years of the introduction of Internet services (Table 6), the data indicates that respondents' research output increased with the advent of Internet services more than the era before Internet services/tools emerged.

**Table 6: Research Output with the Use of Internet Services**

Number of Publications/ Conferences Attended/Times Used Internet Materials for Teaching	Publications Within Three Years as a Result of Utilisation of Internet Services					Conferences and Teaching	
	Books	Chapters in Books	Technical Report / Monograph	Refereed Conference Proceedings	Journal Article	Number of Conferences Attended	Use of Internet Materials for Teaching
0 - 5	82.6%	71.2%	56.2%	68.2%	9.1%	26.0%	0.4%
6 - 11	17.2%	28.8%	35.6%	13.4%	36.8%	12.4%	25.4%
12 and above	0.2%	0.8%	8.2%	18.4%	54.3%	61.6%	74.2%

Source: Field Survey, 2008

Furthermore, Table 6 shows that the advent of Internet services and tools increased the volume of respondents' research output in the following ways. For respondents who had more than 12 publications, chapters in books rose from 0.4% to 0.8%; technical reports and monographs rose from 0.2% to 8.2%; refereed conference proceedings rose from 0.5% to 18.4%; journal articles rose from 30.4% to 54.3%, while the number of conferences attended also increased from 20.5% to 61.6%. This phenomenal increase was attributed to the use of Internet services, tools and technologies. In fact, 74.2% of respondents admitted they relied more on Internet materials for the pursuit of their research publications, conference notifications and for teaching and career advancement generally.

Other factors have also been found to affect the research output of academic staff. Data from the in-depth interviews indicated less emphasis is placed on the publication of books in Nigerian universities than might otherwise be the case elsewhere. In fact, some university policies stand against the production of books by academic staff, because some academics have made buying their own books a basis for extra marks, with the result that this practice is seen as a form of exploitation of students. The reading culture of students

in higher institutions in Nigeria is also said to be very poor (Ololube 2002), thus making any attempt to publish books virtually impossible under the circumstances. It is likely therefore that junior academics within the study institutions do not bother to spend unnecessary time in writing books and monographs that might never be bought or considered for their promotion.

To substantiate the finding that academics now focus more on journal articles for promotion and career advancement purposes, a Lecturer from CU remarked in the course of the in-depth interview that:

What is the point trying to publish a book that will take many years and which may not be accepted by the authorities if you didn't publish it with a reputable company? As a matter of fact, no matter how good the book may be, it will be equated with only one journal article of may be 10 to 15 pages. In my former university, the University of Ibadan, for the purpose of promotion, a book is regarded as a publication if it is more than 80 pages, cover excluded, and it must be published by a reputable publishing firm (Male/2008).

It is important to note, however, that many journal editors in both Nigeria and abroad charge assessment fees before they accept any article for review (Olukoju 2002). This means, therefore, that despite some articles meeting the criteria for publication, without the necessary assessment fee such articles might never be published. A junior lecturer from BU corroborated this view:

...the use of Internet, no doubt, has affected my research pursuits in the sense that I now have free access to materials and information with which I have been able to put together some articles, but yet I have not been able to publish any of them because before any of such articles could be accepted you will be asked to pay a certain amount of money and if you don't have that money at that time, it means your article will be rejected even though it is a good one. Another reason is that I am a bit discouraged because my papers were constantly being rejected in the places I sent them to. Well, I will not give up. I will continue to do my best (Female/2008).

The study further revealed that the Internet has helped many academics to know when and where conferences are to be held. As an example, a senior respondent from CU said that he had a particular package in his computer called "Conference Alert" and that wherever and whenever there were conferences to be held in any part of the world, he would be informed with the help of the alert. Thus, Internet services have helped to increase the awareness of respondents about conferences.

### **Factors Affecting Research Output**

The survey considered different factors which affected the research output of respondents, both positively and negatively (see Table 7). The results indicate that 75.6% of respondents identified the search for knowledge and the need to extend the frontiers of knowledge as the primary rationale for their research efforts. The desire for promotion (64.3%) was another important motivator, followed by access to local and international grants (51.7%) and personal motivation (45.2%).

A total of 16.8% of respondents believed all these factors combined provided the motivation for their quest for research output.

**Table 7: Factors Affecting Research Output**

Questions	Responses		
	Yes Frequency (%)	No Frequency (%)	Total N (%)
<b><i>What are those factors that positively affected your research output?</i></b>			
Personal Motivation	97 (45.2)	117 (54.8)	214 (100)
Desire for Promotion	138 (64.3)	76 (35.7)	214 (100)
Contribution to Knowledge	162 (75.6)	52 (24.4)	214 (100)
Access to Local/Int'l Research Grants	111 (51.7)	103 (48.3)	214 (100)
All of the Above	36 (16.8)	178 (83.2)	214 (100)
<b><i>What are those factors that negatively affected your research output?</i></b>			
Fear of rejection of articles for publication	121 (56.7)	93 (43.3)	214 (100)
Lack of funds	155 (72.6)	59 (27.4)	214 (100)
Unfavourable University policies/ guidelines on promotion	115 (53.7)	99 (46.3)	214 (100)
All of the Above	15 (6.9)	199 (93.2)	214 (100)

Source: Field Survey, 2008

The main factors which had a negative effect on academics' research output were identified as: a lack of funds (72.6%), a fear of rejection of articles for publication (56.7%) and unfavourable university policies/guidelines on promotion (53.7%). A senior academic in one of the in-depth interview sessions held during the course of the research project, empathised with junior lecturers who were mostly at the receiving end of the rejection of their articles. This senior lecturer advised the junior academic staff not to give up, but to persist as success came with persistence. In his words, he said:

Well, we know that it is not an easy thing to remain focused as an academic. There are a lot of challenges and distractions along the way. It is not every article that would be accepted for publication from the beginners. One has to persist without getting discouraged easily. So, my advice for upcoming academics is for them to stay focused, work harder and be disciplined. They should learn to follow the example of successful colleagues, ready to observe and practise what they see especially for those that are worth emulating (Male/2008).

Other respondents (6.9%) claimed that a combination of the identified factors affected their research output negatively.

## Summary

This study has investigated the influence of the utilisation of Internet services on teaching and research output among academic staff in two private universities in South-Western Nigeria. The study also investigated the following specific objectives: the extent to which academic staff of selected universities embraced computer literacy and utilised Internet services; the extent to which the use of Internet services affected teaching and research outputs (publications and conference attendance) of academic staff of study universities; and the factors that might affect the utilisation of Internet services as well as research output of respondents.

From the research, it was highlighted that computer and Internet technologies have become an integral component of academic life in these two private universities. In fact, as identified by the respondents in this study, academics may not be able to carry out in-

depth, robust, relevant and internationally recognised research works without the aid of the services that the computer and Internet offer. Hence, the findings of the research showed that the respondents' self-assessed level of computer literacy (94.4%) and accessibility to Internet services (100%) were high. This finding confirms the impression that the academic culture in Nigerian universities is presently tilting towards global academic best practices, as much emphasis is now being placed on research activities with the aid of information and communication technology.

The study further revealed that academic staff from the sampled institutions made use of computers and Internet services mostly for academic purposes – notably for statistical analysis, word processing and Internet browsing for materials for teaching and research works. The Internet was found to have aided the respondents in sending and receiving email, obtaining and participating in peer group paper review, having access to databases which were not available in their campus libraries and sharing of ideas on the Internet.

However, the study also showed that certain factors such as academic ranking (senior, middle or junior); inconsistent servers, power interruptions and a lack of funds, affected the level of Internet utilisation.

The study further revealed that the utilisation of Internet services aided the respondents to publish their works (54.3%), to attend conferences (61.6%) and to improve both the quality of their teaching (74.2%) and the quality of their research output (79.1%). Furthermore, respondents recorded an improved research output in terms of books, chapters in books, monographs and journal articles, from when they began to use Internet services compared to their research output prior to the implementation of computers and Internet services at their institutions.

Respondents (72.0%) identified a lack of funds (72.0%), unfavourable university guidelines on the promotion of academic staff (53.7%), and a fear of rejection of articles for publication (56.7%) as factors that affected their research output. It was also observed in the study that journal articles were the most frequent form of academic output than other such pursuits, for example, books and chapters in books. The reason for this disparity was attributed to the fact that journal articles carried more weight and attracted higher grades during promotion exercises. In the case of academics, individual traits and environmental factors, as well as differences in perspectives and other social constraints, informed the extent to which they utilised Internet services and for different purposes. These factors also influenced the type of research output they concentrated on (books, chapters in books, monographs, journal articles or conference attendance).

While some academics placed great value on the role of Internet services on their teaching and research output, others, especially many in the senior rank (professors) who had already reached the peak of their career, did not see the need to pursue the Internet, neither did they feel the need to publish their works as much as those in a more junior ranking. In this respect, the junior and middle ranked academic staff, were found to be more motivated in browsing for materials on the Internet for promotional advantages than for scholarship purposes. These choices were based on how they perceived their situations and goals in the university system.

The study, especially from the in-depth interviews, showed that Internet services gave academic staff of these selected universities greater access to collaborative research works, rigorous peer review processes as well as inclusion of their published works in academic journals and on the Internet, which all led to international recognition and enhanced reputations.

## Conclusion

In conclusion, the current study found that most academic staff of the study universities professed to be high Internet utilisers. Furthermore, the study found that ground-breaking research work and effective teaching were done more as a basis for promotion and career ascent, than on the basis of scholarship or contribution to the expansion of knowledge frontiers. Thus, many of the respondents saw Internet resources as a way of improving their research outputs and teaching on one hand, while on the other hand enhancing their career prospects within their institutions. Consequently, academics within the universities of study were driven by the desire to attain high career prospects and also to meet internationally accepted academic standards. Nevertheless, the adoption and consistent utilisation of Internet services as this study has shown has the potential to greatly improve and contribute immensely to effective teaching and increased research output among academic staff of these universities if sustained.

This new century and the third millennium have been termed the information age, and present-day society is often regarded as the information society. Further, it has been shown previously that information and communication technology, particularly Internet services, can have a tremendous impact on the gathering, processing and dissemination of relevant information in various aspects of human endeavours and the economic and social development of countries, as well as among academic communities all over the world. Excellence in tertiary education in Nigeria will be determined by the quality of teaching and research outputs coming from its universities. As the current study has shown, these outputs may very well be dependent on the proper utilisation of Internet services and technologies.

Much further study in this area is required to analyse the effect of Internet services on the teaching and research of academic staff within state and federal universities in Nigeria. In particular, further study could help to identify the constraints inhibiting such institutions in their utilisation of Internet services to further their teaching and research objectives. Such research could help not only to identify new strategies regarding *how* to effectively utilise Internet services for teaching and research in Nigerian universities, but also how to overcome any shortcomings – both individual and institutional – which currently exist.

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