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**CITATION STUDY OF RESEARCH RELATED INTERNET USE BY STUDENTS IN
NIGERIAN ACADEMIC INSTITUTIONS: THE MICHAEL OKPARA UNIVERSITY
OF AGRICULTURE UMUDIKE EXAMPLE**

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Abstract

Purpose: This study examines the utilization of internet by Nigerian students for research using Michael Okpara University of Agriculture Umudike (MOUAAU), post graduate students as case study.

*Methodology: The citation analysis method was employed to discover the extent of internet sources use in the Theses and Dissertations (TDs) written and submitted to the MOUAAU Library. Results: On the whole, a total number of 327 TDs was studied representing all the submissions from 22 departments of 6 different colleges in MOUAAU offering Master and Doctor of Philosophy programmes from the year 2000 to 2010. It was observed that internet use in the TDs studied was poor and insignificant in comparison to other sources of information used by the postgraduate students. This is contrary to the findings in some recent studies where graduate students were reported to have made high use of the internet for TDs research. The researchers consequently recommended urgent education of post graduate students on internet use, essentially inculcating in them how to conduct expert search for academic works, adopt them and cite them in their research writings. It was also recommended that functional internet laboratories should be established in the university libraries to ensure self directed learning which is hoped will result in life- long learning. **Keywords:** Citation Study, Internet Use , Academic Institutions, postgraduate Students, Nigeria*

Introduction

The internet is now widely used as a communication channel. It is a twentieth century information resource leverage medium designed for everyone. Data on the internet are interchangeably called online information, web resources, e-resources and so forth. Many research groups have set up websites and gopher sites summarizing their areas of study. As a result, the internet has become one of the most important channels of communication of our time, a powerful tool in searching for, retrieving, disseminating and improved utilization of information (Unagha, 2008; Penny, 2006).

Thanuskodi (2010) has observed that as sources of information available via the internet are increasing exponentially, internet use for education and for research is also on the increase. In the academic perspective, the internet host and allow access to subject gateways, databases and professional websites which contain various types of scholarly resources like electronic copies of journals, articles, books, datasets, short communications, formula, monographs, encyclopaedia, dictionaries, instructional notes, informative web-pages, with numerous links to search and research related websites. Hence, researchers all over the world are taking advantage of the internet (Bamigboye and Ojo, 2010; Agarwal and Dave, 2009; Mariyappagoudar and Jayashree (2000).

The above notwithstanding, this study aims at investigating the claims of student some Nigerian students respondents in recent studies by Nigerian scholars that they use internet services more for research than for other reasons(Ilo and Ifijeh, 2010; Fasae and Aladenyi, 2012; Oyedun, 2007; Salaam and Adegboye, 2010; Ibegwam, 2004;). Since these studies that produced this claim were based mainly on the respondents perceptions, no one is sure if the students actually used the internet for research writings or not. This study therefore aims at establishing how the internet has influenced academic research at the graduate level. This done through , a citation analysis of the Theses and Dissertations (TDs), which are submitted annually by these students in partial fulfilment of the requirements for the award of the degrees. This study also seeks to find out if there is an actual relationship between Nigerian students' claim of internet use during research as reported in previous studies and the actual evidence in their final research

project, using Michael Okpara University of Agriculture Umudike, post graduate students as a case-study.

Brief Information on Michael Okpara University of Agriculture, Umudike

Michael Okpara University of Agriculture, Umudike (MOUAAU) is one of the academic institutions in the Eastern part of Nigeria that offer among other programmes post graduate courses in agricultural sciences and allied fields. The institution was established in 1994. It is located in Umudike, one of the neighbouring towns in the capital city of Abia State. The institution is one of the three federal universities in Nigeria mandated to focus on teaching, learning and research on agriculture. Presently inside the campus, internet connectivity is possible through the university's National Communication Commission (NCC) wireless fidelity (WIFI) satellite dish and also from a commercial service provider (AfriHub International) resident on campus and operating under agreement with the university. However, the internet speed is very slow and has been a source of complain by both students and staff within the university community. Yet, with patience and luck of not encountering too many users of the bandwidth at a go, meaningful searches and downloads are still made. So, with few months close to its twentieth year of existence, MOUAAU has contributed to the quantum of academic research in Nigeria and across the globe with about eighty percent (80%) of her entire faculties running postgraduate programmes in some of their departments. (<http://www.mouauregistry.com/progdeptlist.aspx>).

Objectives of the Study

This research has the main objective of at establishing the extent of use of sources available on the internet for research writing by post graduate students. Specifically, the objectives of the research are:

- To find out the quantity of internet sources in Post graduate research works submitted to MOUAAU library in relation to print resources.
- To find out the post graduate research class that used internet information resources in their final research work more than the others.

- To find out the class of post graduate research work that has the highest ratio of internet sources in its reference.
- To make recommendations to MOUAU library vis-à-vis the utilization of internet information resources.

Review of Relevant Literature

The use of the internet information resources for research has been reported in various studies. Agarwal and Dave (2009) studied the use of internet by the scientists and researcher fellows of Central Arid Zone Research Institute and report that the students depended on the internet as a veritable source of research information. Thanuskodi (2010) has studied health science researchers' use of internet in the course of research and reports massive use of this source. Kumar and Kaur (2006) reports that the internet resources are now preferred source of research information to the print resources among teacher and students. Panda and Sahu (2003) show that health professionals are utilizing the internet greatly, to meet their medical information needs. This is supported by Parameshwar and Patil (2009) who infer that the use of internet is important and beneficial for research. Meanwhile, Mahajan (2006) has shown that the beauty of today's information society lies largely on the utilization of the internet. Researchers and scholars are able to find and share their research findings through the internet. Kamba (2008) maintains that the internet has not only reduced the need to store information resources but has also increased the output of research publications globally.

In Nigeria, Ugah and Okafor's (2008) survey, which focused on MOUAU, was essentially on faculty use of internet for research and education. Ilo and Ifijeh (2010) has summarized the benefits of the internet in the context of research and scholarship, maintaining that the internet is an invaluable medium for undergraduate students' research. Ibegwam, A (2004) supports this view and further reported the availability, accessibility and us utilisation of Internet sources by medical Students. Ogunyade and Ibegwam, (2011) posited that Librarians should transit from being information "container manager" and become information "content manager" by engaging in medical informatics in their bid to meet the information needs of students among others. This in line with Uzuegbu, Chukwu and Ibegwam(2012) that testified of preference students for the use of the electronic data bases which also have online versions than just using ordinary search engines for their research work.

In another study, Jagboro (2003) has revealed that students in the Southern part of Nigeria accepted the use of the internet for finding research materials. This position is supported by Fasae and Aladenyi's (2012) who stated that students use the internet for research more than they use it for communication and entertainment. Students further accepted that the internet is more informative, useful, less expensive, time saving. Moreover, information retrieved from the internet is easy to save comparison to conventional documents. But, the confusing point of these findings with students' comments is that while students accept the use of internet for research more than for other things, they would later list using of e-mail, World Wide Web and social networks as major services derived in their use of internet.

This will appear a contradiction because the services they key to more often, according their responses, are not closely justifying their claim of using the internet for research – particularly for academic writings. This observation is common in studies by Fasae and Aladenyi's (2012); Oyedun (2007); Salaam and Adegboro (2010). Apart from Igun's (2005) study, which established that the internet has not influenced Nigerian students academic research in Delta State, available studies on this subject matter are premised on the respondents perception and as such may not represent the actual internet use for scholarly writing of the Nigerian students in relation to their Projects, Theses and Dissertations. This research therefore uses the citation study method to investigate the claims of Nigerian students as reported by Nigerian scholars that the use of the internet has aided their research writings. The result in this study may be more qualitative judging by the arguments of researchers that citation related studies are comprehensive methods in reporting user related surveys (Tsay 1998, Blečić, 1999, and Fuchs et al., 2006).

The word *citation* refers to the list of references to other works contained in a scholarly communication or writing. Citation studies enables a researcher to read through and cross check bibliographic statements made in a work, reporting on issues such as relationship between published works, and impact factors. It advises librarians on user needs, users most used information resources and generally reveal varying information about the users of the information (Curtis, 2005; Coleman, 2004; Garfield, 2004; and Johnson, 2000). Therefore, the adoption of citation studies in this paper is intended to report the influence of internet use for research by students in Nigeria, using MOUAU as a case study.

Methodology

Citation study method was adopted for this research. TDs written by MOUAU's Masters (Msc.) and Doctor of Philosophy (PhD) students from the year 2000 to 2010 and submitted to the University Library constituted the population of the study. The selection of this study years was guided by the availability of TDs processed and shelved in the MOUAU library. On the whole, a total number of 327 TDs was studied. This represents all the submissions from 22 departments of 6 different colleges in MOUAU offering master and doctor of philosophy programmes. The table below shows a distribution of TDs, departments and Colleges of the study population.

Table 1: Distribution of Study Population

S/N	COLLEGES	DEPARTMENTS/STUDY AREA	TOTAL NO OF TDs		
			Msc	PhD	Total
1	Crop and Soil Sciences (CCSS)	Agronomy	23	12	35
		Soil Science and Agroclimatology	8	4	12
		Crop Protection	-	3	3
2	Natural and Applied Sciences (CNAS)	Physics	5	2	7
		Biochemistry	10	-	10
		Chemistry	21	4	25
		Maths/Statistics	5	-	5
		Maths/Physical Sciences	1	2	3
		Microbiology	18	2	20
		Biological Science	6	5	11
	Plant Health and Management	14	4	18	
3	Animal Science and Animal Production (CASAP)	Ruminant Animal Production	2	3	5
		Animal Science	19	5	24

		Animal Production and Livestock Management	2	-	2
		Animal Breeding and Physiology	5	1	6
		Non-Ruminant Animal Production	12	3	15
4	Natural Resources and Environmental Management (CNREM)	Fisheries	5	4	9
		Forestry and Environmental Management	20	5	25
5	Food Science and Technology (CFST)	Home Economics and Hotel Management	8	-	8
		Human Nutrition and Dietetics	12	6	18
		Food Science and Technology	27	1	28
6	Agric Economics and Rural Sociology and Extension(CAERSE)	Agric Economics	30	8	38
TOTAL			253	74	327

The researchers read through the reference pages of every single TD to select the references that contain internet features in its bibliographic details. It was agreed that in any class of information resource like e-copies of journals, articles, books, datasets, short communications, formula, monographs, encyclopaedia, dictionaries, theses, dissertations, instructional notes, etc. or web-pages and website posts, the common features of: universal resource locators (URLs), digital object identifiers (DOIs), ERIC/other database identifiers, access/retrieval dates and any parenthetical statement bearing internet links; will be thoroughly searched for and noted vis-à-vis the total number of references in each work. All the TDs in MOUAU were made in compliance to the American Psychological Association (APA) referencing style, this dispelled bias in the research method. The APA style, the 5th edition, which was APA's recommended publication

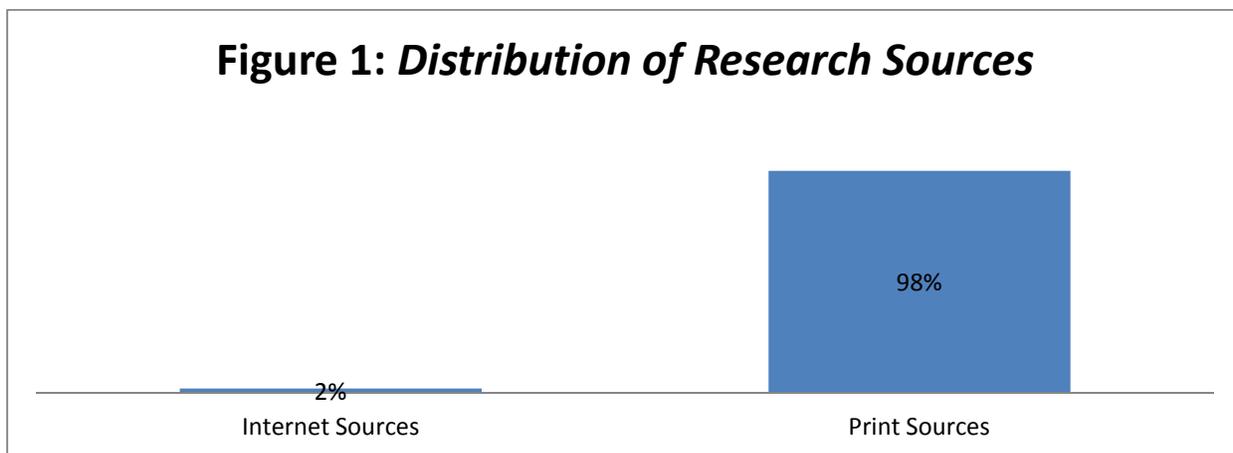
within the years covered in this study, required that, amongst other descriptions, the referencing of online or electronic resources should contain the URL or place of retrieval of information along with the retrieval date. Afterwards, all data was analysed with frequency counts and charts. Data analysis is based on the research objectives.

Findings and Discussion

This study examined a total number of 34,150 references contained in 327 TDs. All data are presented in the sequence of each research objective, particularly the first three objectives of the study.

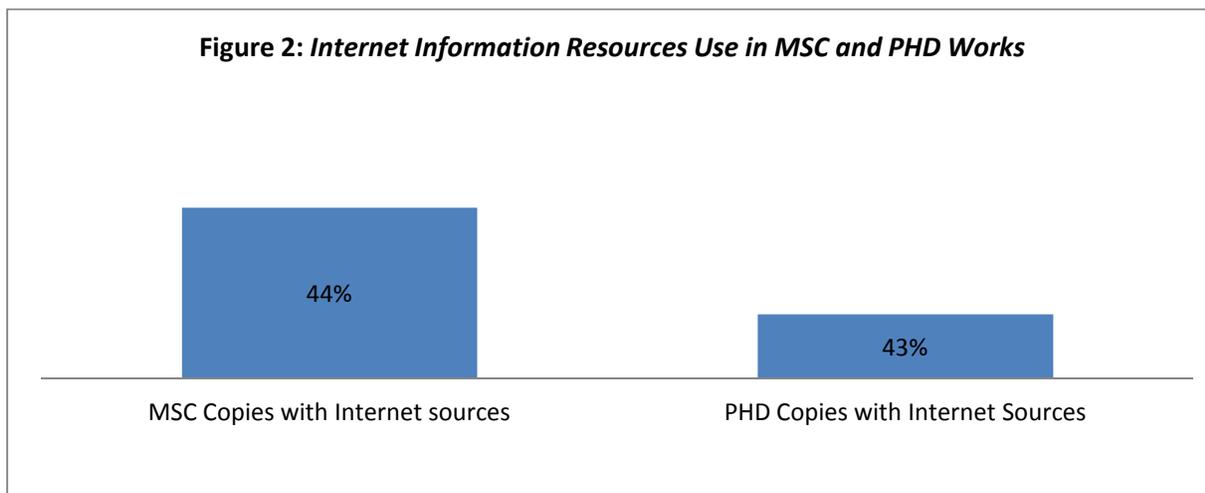
1. **Objective 1:** *The first objective of this study is to find out the quantity of internet sources in Post graduate research works submitted to MOUAU library.*

Figure1: below shows the percentage distribution of the references vis-à-vis internet sources and print resources.



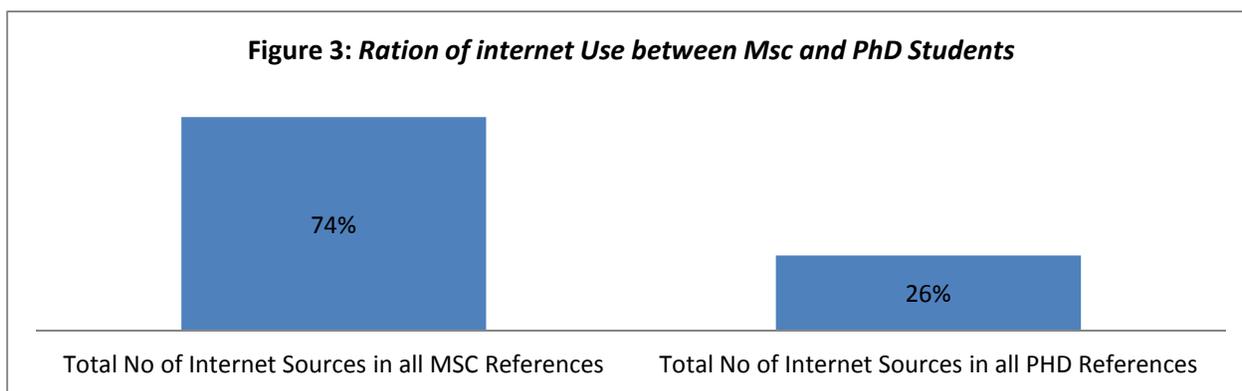
It is shown in the figure above that out of 34, 150 references sources contained in all the studied TDs (327 TDs), only 522 references (2%), cited in 143 TDs, are internet/electronic sources while 33,628 references (98%) are print resources. It will not be out of place to state that the quantity of internet sources in post graduate research works submitted to the MOUAU library is very poor and insignificant compared to those of the print resources.

2. **Objective 2:** The second objective of the study is to find out the post graduate research class that used internet information resources in their final research work more than the others. Two post graduate classes, Msc and PhD, were examined. As shown in Figure 1 earlier, Msc research works are 253 in number while PhD research works are 74 theses.



Thus, while there are 111 (44%) Msc works with internet sources out of 253 Msc Dissertations, The PhD works which contain internet sources in its reference are 32 (43%) out of a total 74 PhD works. Hence, there is no significant difference in use of internet sources between Msc and PhD students of MOUAU.

3. **Objective 3:** The third objective of the study is to find out the class of post graduate research work that has the highest ratio of internet sources in its reference. Out of the 522 internet/electronic sources in the TDs studied, figure 3 below shows the its distribution in Msc and PhD research studies.



In Figure 3 above, it has been shown that out of 522 internet sources contained in all the TDs studied, 74% (384) are found in Msc works while PhD works has 26% (138). Meanwhile, it should be noted that PhD works constitute 23% (74 out of 327) of the entire TDs under study. So, in a situation where 26% (138) of the 522 internet reference sources in all TDs are seen in PhD works, it means that PhD works have more citations of internet sources than the Msc dissertations which have 77% (See Table 1) of the TDs holding but contribute only 74% (384) of the 522 internet reference sources in all the TDs.

Conclusions and Recommendations

This study has shown that internet use for research by post graduate students in MOUAAU is very poor. This contradicts the available studies where Nigerian students declare that they utilize the internet more for research writing than for other reasons (Ilo and Ifijeh, 2010; Fasae and Aladenyi, 2012; Oyedun, 2007; Salaam and Adegboro, 2010; Jagboro, 2003; Igun, 2005). Thus, an investigation into the finished research writings of MOUAAU post graduate students has disagreed with these submissions. So, it may be possible that while students in previous studies respond to use of internet for research, they may actually not utilize it to add to their final degree research, which this study believes is the end product of students' research in tertiary institutions. The poor citation of the internet sources in the studies of these graduate students may also be a result of the poor nature of the available internet facilities in the institution which is characterised by low speed, epileptic power supply even though the service is fee based. In addition, there appears to be no night life, as a result of the security concern in the state, as opposed to the areas studied by previous scholars. It must also be pointed out that even though security has become a source for concern in many Nigerian states, the level varies and it has not reduced campus activity to 8am to 4pm activities. Moreover, many of the higher institutions studied previously have campus accommodation for many of their staff and students with the implication that internet services can be given by the university libraries that offer 24 hours service or close by 10pm as opposed to what is available in the MOAU

Closely related to this is that in some of the Nigerian universities studied previously the Management has ensured that the students and staff not only are trained to be computer literate but were given computer laboratories in the university library where they were encouraged to do an individualistic study at their convenience and at their own time and pace

It is therefore recommended that university managements ensure that the students be educated on internet use, through a well planned and articulated process that ensures that the frustrations of epileptics power supply and slow internet loading due insufficient subscription of bandwidth and computer laboratory where faulty computer systems are not maintained routinely or the cooling systems functional is eliminated. A yearly workshop aimed essentially at inculcating in the students how to search for academic works on the internet, adopt them and cite them appropriately in their research writings as is the pattern in the first generation universities like the University of Ibadan may correct this anomaly.

Finally, the librarians, must continue to insist and ensure that more of the library funds are used to equip the library with internet facilities, since it is the most public department of the university and by implications gives access to 'whosoever wills'; while at the same time ensuring the training and retraining needs of library staff so as to meet the training need of the students of their institutions to effectively source quality information online.

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