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INFORMATION LITERACY SKILLS, USE OF ONLINE COLLABORATIVE TOOLS AND RESEARCH PRODUCTIVITY AMONG MANAGEMENT AND SOCIAL SCIENCE LECTURERS IN A PRIVATE UNIVERSITY IN NIGERIA

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Abstract

Research productivity is key in determining the progress of any lecturer and the University. Many factors contribute to research productivity including funding, mentorship, training and collaboration. Unfortunately, research productivity of lecturers in private universities in Nigeria may not be satisfactory. Hence the need to investigate the influence of information literacy skills, use of online collaborative tools on research productivity of lecturers in a private university in Nigeria. The study employed the survey design. The study enumerated 103 lecturers in two (2) schools in a private university. A structured questionnaire was used for data collection. The study had 87% response rate. Data was analysed using descriptive and inferential statistics. The result revealed that information literacy skills significantly influenced research productivity of lecturers ($R = .32$, $F_{1,82} = 9.30$, $P < 0.05$) while collaborative tools did not significantly influence research productivity ($R = .13$, $F_{1,82} = 1.46$, $P > 0.05$). Further, it was found that lecturers' information literacy skill was at a proficient level ($M= 3.95$) and lecturers rarely use online collaborative tools ($M = 1.25$). In conclusion, information literacy skill contributes to research productivity of lecturers in a private university. Hence university managements should organize more information literacy programmes to improve lecturers' research productivity.

Keywords: information literacy, information literacy skills, online collaborative tools, use of online collaborative tools, research productivity, lecturer's research productivity.

Introduction

In this age of Information and Communication Technology (ICT) that has led to the explosion of information, the ability to operate ICT tools is important, especially in academic environments. This is because ICT continuously assists and transforms the ways activities are carried out such as support for research and other educational activities. Nwosu, Obiamalu and Udem (2015) opined that the application of ICT for academic pursuit has helped to improve research productivity of academics in universities. Defining ICT, Akpan (2008) stated that it is a process of creating, processing, storing, retrieving and disseminating information and data using computers and telecommunications. ICT and its tools have also made it possible for lecturers from different environments to collaborate in research publications, which result is quality research output. According to Rashid (2001), research output is the work that has been researched upon and published in journals, book chapters, monographs, articles, technical reports, bulletins, conference papers, working papers, short communication papers, patents and standards. To Madu and Dike (2012), research output is the end product of a researcher's ability to use his intelligent quotient (IQ) to collect, modify and critically analyse information and come out with an authentic result that will help in the advancement of knowledge. Research output according to Chinamasa (2015) encompasses all activities that require knowledge and ability to research which include delivery of lectures in research methods, presentation of proposals, supervision of students' research and publication of research work.

This study considers research output as the outcome of a study or investigation carried out by a faculty member to discover facts and solutions to a problem or a phenomenon. It is important to state at this point that without information literacy skills, it will be difficult for a user of information, including lecturers to access, retrieve and use quality information available in various media and channels. More so, lecturers without the necessary skills to identify, access, retrieve and use information will find it difficult to publish quality research work. Observation made by Okiki and Mabawonku (2013) is that most of the academic research works are published locally within Nigeria is as a result of high rejection rate by international indexed

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journals. This is because the indexed journals are regarded as high quality journals and do not accept outputs that are not considered to be of good quality for publication. This implies that quality research paper will be accepted in high impact journals and this help researchers and academics to be recognized nationally and internationally through their quality output. Okafor (2013) commented that qualitative research outputs are research works that are accepted for publication in international journals. Lecturers with proficiency in information literacy can make use of the opportunity brought by ICT to collaborate with other lecturers to publish quality papers with the use of various online collaborative tools. A collaboration involves two people or more who interact with each other, at certain period, working together to achieve the same goal (Patel, Pettitt, & Wilson, 2012). In any research collaboration process, communication is an essential part especially when the researchers are working via the internet (Behles, 2013).

Among the importance of ICT identified by Radloft (2001) is that ICT encourages collaboration and team work among staff and students within and outside the environment. Gonzalaz, Liao, and Wong (2015) noted that in research, collaboration helps to ensure that each researcher is working on the right task and promotes exchange of ideas about the research. Collaboration activities among a group of researchers can be done without physical meeting of its members by using collaborative technology or tools. Collaboration technology is a technology in terms of software or web resources that supports collaborative activities and coordination between related part to achieve certain business and organization goals (Munkvold, 2003). Web-based collaborative tools usually require no pay or additional hardware but just internet access (Dennis, 1996). For researchers, online collaborative tools help to discover collaborators and to be discovered by collaborators; communicate and manage projects; brainstorm; share references and documents as well as create content (Rrosy, 2017). From the literature, collaboration tools perform communication, project management and content management functions thereby these tools are broadly classified as communication tools, project management tools and content management tools. First, communication tools such as email, Skype, GoToMeetings allow interaction, exchange of audio and video files between team members. Second, project management tools such as Microsoft Project, Google Drive and Dropbox allow users to update work status, completion level as well as share documents or files. Lastly, content management tools or systems such as Joomla promote exchange of information and help manage contents.

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Lopes, Oliveira and Costa (2015), in their study which assessed if online collaboration tools improve teamwork found out that majority of participants like to work with online tools. It was revealed that e-mail is the most used tool for collaboration among team members. In addition, file sharing documents were found to be used by participants. But project management tools and content management tools were least used among respondents. A study by Naseem, Crichton, Wamakote, Ojuando and Roach (2008) on building a case for the use of collaborative tools for research development and professional service, established that ICT helps the participants of the study to communicate and collaborate to develop research and professional development programmes. The study also revealed several tools such as email, Skype, Google docs, Del-cio-us, and Moodle that were helpful in their work, thus recognized the benefits ICTs can bring to working teams. Furthermore, Chinamasa (2015) studied the development of lecturer research skills in a higher education institution in Zimbabwe and established that research output of the respondents was affected by lack of both research and publishing skills and mentoring by research supervisors. Many studies have identified different obstacles to academic research. They include funding (Zindi & Munetsi, 2008); environmental factors such as shortage of senior level lecturers and researchers to mentor others (Ntiamoa-Baidu, 2008); lack of training in the use of computers as tools for effective teaching and research purposes (Onasanya, Oduwaiye & Shehu, 2010); huge teaching load (Chinamasa, 2015). The above stated challenges and more can hinder research output and effective collaborative work.

According to Bassey, Akuegwu, Udida, and Udey (2007), through collaborative tools researchers can build knowledge, conduct trans-national studies as well as encourage collaboration among researchers. In the same vain, it is believed that information literacy skills tend to allow researchers especially, lecturers to navigate and carry out their teaching and research activities, as well as coordinate their activities in the most possible way. More so, with the proliferation of information due to the availability of ICT, skills and ability to source, access, retrieve and use information become inevitable. Based on this, Pezeshki-Rad and Zamani (2005) concluded that the real challenge is not producing information, storing or accessing information; rather getting people to gain access, retrieve and use information; required skills are needed. Monou (2002) asserts that an average information resources user needs some skills, which include knowing the source of information services, arrangement of information in various forms or sources, knowledgeable on the different means of using computers and websites to retrieve information and being informed about laws ensuring their rights on use of information. Okiki and Mabawonku (2013) cited in Nwosu, Obiamalu and Udem (2015) posited that availability and access to information is not enough to ensure that information users will possess requisite skill to effectively make use of information resources at their disposal. Therefore, the various ways of organizing and presenting information literacy indicates that information resource users need to possess information literacy skills in order to achieve a realistic outcome.

Without information literacy skills, lecturers will not be able to carry out quality research. Madu and Dike (2012) established in their study that a significant relationship exists between information literacy competencies and the productivity of academic staff in North Central geographical zone, Nigeria. In a study by Nwosu, Obiamalu and Udem (2015) on the relationship between information literacy skills and research output of academic staff in Nnamdi Azikiwe University Awka, Nigeria, they established a significant relationship between information literacy skills and research output of academic staff. The study also found that the academic staff of the university possessed moderate level of information literacy skills. However, a study of information literacy skills of faculty members in the University of Hahore, Pakistan by Rafique (2014) revealed that majority of the faculty members are deficient in searching catalog and its use, choice of information sources, selection of relevant sources and formulation of search strategies. This signifies that the faculty members in their study area do not possess information literacy skills and this can grossly affect the research output of university lecturers.

Evidence from reviewed literature tends to indicate that there is enough literature on information literacy skills and research publication by lecturers. However, there seems to be little or none that combined information literacy skills, online collaborative tools and research productivity of lecturers. Use of collaborative research tools among lecturers seem not to be encouraging in developing countries like Nigeria as the plausible reasons for this may be lack of information literacy skills and non-awareness of online collaborative tools, to mention but a few. It is therefore, the intent of this study to investigate the influence of information literacy skills, use of online collaborative tools on research productivity among lecturers at Babcock University, Ilishan-Remo, Ogun State, Nigeria. Specific objectives are to:

1. determine the information literacy skills of Management and Social Science lecturers,
2. describe the online collaborative tools used by Management and Social Science lecturers,

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3. find out the reasons why Management and Social Science lecturers use online collaborative tools,
4. determine the level of Management and Social Science lecturers' research productivity,
5. describe the factors that hinders research productivity among Management and Social Science lecturers.
6. determine the influence of Management and Social Science lecturers' information literacy skill on their research productivity
7. determine the influence of use of online collaborative tools by Management and Social Science lecturers on their research productivity

Method

The survey research design was employed for the study. The study enumerated all 103 lecturers that formed the population found in the School of Management Sciences and Veronica Adeleke School of Social Sciences, Babcock University, Nigeria. Data was collected from all 103 lecturers using a validated self-designed questionnaire. The questionnaire had major sections and contained questions with the Yes/No and the Likert-type response format. The first section gathered the demographic information of participants. Next, the informational literacy section that captured the proficiency level of lecturer's literacy skill. The third section captured data on lecturers' level and reasons for use of online collaborative tools. The final section was on challenges lecturers face regarding research productivity. For data analysis, both descriptive statistics such as mean, percentage and frequency count and inferential statistics including regression analysis were performed using the IBM SPSS (v. 25.0) software. Of all 103 copies of the questionnaire distributed to the respondents, 90 (87%) were duly completed and returned. The analysis was done based on the completed ones.

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Results

This section presents the result and interpretation of the data gathered and analysed for the study.

RQ 1: How Information literate are the Management and Social Science lecturers in the University

Table 1: Information Literacy Skills of Lecturers

My position at:	Expert (%)	Proficient (%)	Advanced (%)	Beginner (%)	Novice (%)	Mean (SD)
using online information sources.	36	42	12	0	0	4.27
	(40.0)	(46.7)	(13.3)	(.0)	(.0)	(.68)
selecting information most appropriate to my need	48	18	24	0	0	4.27
	(53.3)	(20.0)	(26.7)	(.0)	(.0)	(.86)
making citation and using quotations within the text	39	33	18	0	0	4.23
	(43.3)	(36.7)	(20.0)	(.0)	(.0)	(.77)
identifying the sources of information, I require to satisfy my information need.	30	42	15	3	0	4.10
	(33.3)	(46.7)	(16.7)	(3.3)	(.0)	(.79)
browsing through the library shelves to locate needed information sources.	39	24	24	3	0	4.10
	(43.3)	(26.7)	(26.7)	(3.3)	(.0)	(.91)
using print information sources.	30	42	15	0	3	4.07
	(33.3)	(46.7)	(16.7)	(.0)	(3.3)	(.90)
defining my information needs.	24	48	18	0	0	4.07
	(26.7)	(53.3)	(20.0)	(.0)	(.0)	(.68)
using internet search tools such as search engines, directories, etc.	24	45	18	3	0	4.00
	(26.7)	(50.0)	(20.0)	(3.3)	(.0)	(.78)
evaluating information critically	27	42	18	0	3	4.00
	(30.0)	(46.7)	(20.0)	(.0)	(3.3)	(.90)
writing a research paper	24	48	15	0	3	4.00
	(26.7)	(53.3)	(16.7)	(.0)	(3.3)	(.86)
classifying information I retrieve	27	33	24	6	0	3.90
	(30.0)	(36.7)	(26.7)	(6.7)	(.0)	(.91)
creating bibliographic records for different kinds of materials (books, journals, internet sources, etc.)	21	39	24	6	0	3.83
	(23.3)	(43.3)	(26.7)	(6.7)	(.0)	(.86)
retrieving information materials from library databases	27	30	21	12	0	3.80
	(30.0)	(33.3)	(23.3)	(13.3)	(.0)	(1.02)
searching library catalogue using subject, title, author.	15	45	15	15	0	3.67
	(16.7)	(50.0)	(16.7)	(16.7)	(.0)	(.95)
using the library's OPAC (Online Public Access Catalogue)	21	24	36	6	3	3.60
	(23.3)	(26.7)	(40.0)	(6.7)	(3.3)	(1.03)
conducting online search using keywords and Boolean operators (AND, OR, NOT)	15	24	36	6	9	3.33
	(16.7)	(26.7)	(40.0)	(6.7)	(10.0)	(1.14)
Weighted Mean					**3.95**	**0.65**

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Table 1 shows the information literacy skills of lecturers in School of Management Sciences and Veronica Adeleke School of Social Sciences, Babcock University. Judging by the grand mean of 3.95 in Table 1, it is evident that the respondents are proficient in their information literacy skills. The finding of this study is in dis-consonant with the findings of Rafique (2014), who studied information literacy skills of faculty members in the University of Hahore, Pakistan and discovered that majority of the faculty members are deficient in searching catalogue and its use, as well as choice of information sources, selection of relevant sources and formulation of search strategies. Further, with the individual mean scores of the items in table 1, it is clear that the lecturers in this study are proficient in information literacy skills.

RQ 2: What are the online collaborative tools used by Management and Social Science lecturers?

Table 2: Online Collaborative Tools Used By Lecturers

Online Collaborative Writing Tools	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)	Mean (%)
Collaborative Writing Tools						
M.S. Word	51	21	3	3	12	4.07
	(56.7)	(23.3)	(3.3)	(3.3)	(13.3)	(1.40)
Google Doc	39	27	9	3	12	3.87
	(43.3)	(30.0)	(10.0)	(3.3)	(13.3)	(1.37)
Spreadsheet	27	24	18	12	9	3.53
	(30.0)	(26.7)	(20.0)	(13.3)	(10.0)	(1.32)
Open Office	9	12	15	21	33	2.37
	(10.0)	(13.3)	(16.7)	(23.3)	(36.7)	(1.36)
Shared drive	3	9	27	21	30	2.27
	(3.3)	(10.0)	(30.0)	(23.3)	(33.3)	(1.13)
LaTeX	0	0	6	27	57	1.43
	(.0)	(.0)	(6.7)	(30.0)	(63.3)	(.62)
Average Mean					**2.23**	**0.55**
File Sharing Tools						
Google drive	18	24	18	9	21	3.10
	(20.0)	(26.7)	(20.0)	(10.0)	(23.3)	(1.45)
Dropbox	15	27	12	21	15	3.07
	(16.7)	(30.0)	(13.3)	(23.3)	(16.7)	(1.37)
Open drive	0	12	15	21	42	1.97
	(.0)	(13.3)	(16.7)	(23.3)	(46.7)	(1.09)
DropSend	0	9	12	21	48	1.80
	(.0)	(10.0)	(13.3)	(23.3)	(53.3)	(1.02)
YouSendIt	0	3	18	24	45	1.77

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	(.0)	(3.3)	(20.0)	(26.7)	(50.0)	(.89)
Pando	0	0	9	27	54	1.50
	(.0)	(.0)	(10.0)	(30.0)	(60.0)	(.67)
Average Mean					**1.05**	**0.66**
Virtual Research Work Environment						
Mendeley	18	3	12	15	42	2.33
	(20.0)	(3.3)	(13.3)	(16.7)	(46.7)	(1.57)
Sharedrive	6	3	18	12	51	1.90
	(6.7)	(3.3)	(20.0)	(13.3)	(56.7)	(1.23)
Sharepoint	3	3	21	9	54	1.80
	(3.3)	(3.3)	(23.3)	(10.0)	(60.0)	(1.11)
MyExperiment	6	6	3	21	54	1.77
	(6.7)	(6.7)	(3.3)	(23.3)	(60.0)	(1.21)
eCAT	0	0	9	15	66	1.37
	(.0)	(.0)	(10.0)	(16.7)	(73.3)	(.66)
Average Mean					**2.92**	**0.78**
Project Management Tools						
Microsoft Project	0	9	12	18	51	1.77
	(.0)	(10.0)	(13.3)	(20.0)	(56.7)	(1.03)
NVIVO	6	0	9	9	66	1.57
	(6.7)	(.0)	(10.0)	(10.0)	(73.3)	(1.12)
Trac	0	3	0	18	69	1.30
	(.0)	(3.3)	(.0)	(20.0)	(76.7)	(.64)
Basecamp	0	0	3	18	69	1.27
	(.0)	(.0)	(3.3)	(20.0)	(76.7)	(.51)
Average Mean					**2.20**	**0.82**
Social Bookmarking						
Del.ici.ous	0	0	9	15	66	1.37
	(.0)	(.0)	(10.0)	(16.7)	(73.3)	(.66)
Digg	0	0	3	15	72	1.23
	(.0)	(.0)	(3.3)	(16.7)	(80.0)	(.50)
CiteULike	0	0	3	15	72	1.23
	(.0)	(.0)	(3.3)	(16.7)	(80.0)	(.50)
Connotea	0	0	3	12	75	1.2
	(.0)	(.0)	(3.3)	(13.3)	(83.3)	(.48)
Xmarks	0	0	3	12	75	1.2
	(.0)	(.0)	(3.3)	(13.3)	(83.3)	(.48)
Average Mean					**1.83**	**0.86**
Social Networking Sites						

Academia.edu	30	36	18	3	3	3.97
	(33.3)	(40.0)	(20.0)	(3.3)	(3.3)	(.99)
Facebook	36	30	12	6	6	3.93
	(40.0)	(33.3)	(13.3)	(6.7)	(6.7)	(1.19)
LinkedIn	24	33	24	0	9	3.7
	(26.7)	(36.7)	(26.7)	(.0)	(10.0)	(1.17)
Research gate	24	33	18	3	12	3.6
	(26.7)	(36.7)	(20.0)	(3.3)	(13.3)	(1.29)
You tube	15	24	24	9	18	3.1
	(16.7)	(26.7)	(26.7)	(10.0)	(20.0)	(1.36)
Flickr	3	0	21	21	45	1.83
	(3.3)	(.0)	(23.3)	(23.3)	(50.0)	(1.01)
Average Mean					**1.48**	**0.58**
Weighted Mean					**1.25**	**0.78**

The weighted mean of 1.25 as indicated on Table 3 shows that the respondents rarely use collaborative tools in carrying out their research activities. However, the average mean of 2.29 indicates that the lecturers sometimes use virtual research work environment. The table also shows the average mean scores of collaborative writing tools 2.23, file sharing tools 1.05, project management tools 2.20, social bookmarking 1.83 and social networking sites 1.48, shows that the respondents rarely use collaborative research tools.

RQ 3: Why do Management and Social Science lecturers use online collaborative tools?

Table 3: Reasons Lecturers use Collaboration Tools

	Yes		No	
	N	**%**	**N**	**%**
To Communicate	63	70.0%	27	30.0%
To Share Documents	48	53.3%	42	46.7%
To schedule or assign work	27	30.0%	63	70.0%
To work with researchers outside your organisation	42	46.7%	48	53.3%
To work with researchers within your organisation	33	36.7%	57	63.3%

The respondents were asked to indicate by ticking Yes or No why they use collaborative tools. Table 3 revealed that they use collaborative tools mostly to communicate, to share documents and to work with researchers outside their organization.

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RQ 4: What is the level of lecturer's research productivity?

Table 4: Research Productivity of Lecturers

S/N	Research Productivity of Lecturer	NO. OF PUBLICATIONS FROM 2015 – 2017
1	Articles in learned journals	429
2	Chapters in books	114
3	Conference proceedings	114
4	Occasional papers	60
5	Co-authored textbooks	57
6	Edited books	42
7	Monographs	21
8	Textbooks	21
9	Technical reports	18
10	Patent and certified invention	6

In order to find out the research productivity of the respondents, they were requested to kindly indicate the number of their research publications within the period of 3 years (2015 – 2017). Table 4 shows that articles in learned journals had the highest response rate (429) of lecturers' publications. This is followed by chapters in books and conference proceedings (114) respectively. Monographs (21), technical reports (21), patent and certified invention (6) got the lowest response rate. This means that lecturers publish majorly in journal with few publishing textbooks, monographs, edited books, co-authored textbooks, and occasional papers. The reason for this may be attributed to the fact that monographs and textbooks take longer time to publish than articles. In addition, patent and certified invention having the lowest response rate could be because the respondents' discipline is in the area of management science and not pure science that are into experimentation.

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RQ 5: What factors hinders research productivity among lecturers at Babcock University?

Table 5: Factors That Hinder Research Productivity of Management and Social Science Lecturers

Hindrances to Research Productivity of Lecturers	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Undecided (%)	Mean (SD)
Too much teaching load	48	33	3	3	3	4.33
	(53.3)	(36.7)	(3.3)	(3.3)	(3.3)	(.95)
Too much administrative load	33	42	3	3	9	3.97
	(36.7)	(46.7)	(3.3)	(3.3)	(10.0)	(1.20)
No research grant	36	21	12	9	12	3.67
	(40.0)	(23.3)	(13.3)	(10.0)	(13.3)	(1.43)
Financial constraints	18	27	24	12	9	3.37
	(20.0)	(30.0)	(26.7)	(13.3)	(10.0)	(1.23)
Unavailability of information sources	18	18	21	27	6	3.17
	(20.0)	(20.0)	(23.3)	(30.0)	(6.7)	(1.25)
Lack of information retrieval skills	3	27	18	33	9	2.80
	(3.3)	(30.0)	(20.0)	(36.7)	(10.0)	(1.08)
Lack of ability to source information	9	18	15	39	9	2.77
	(10.0)	(20.0)	(16.7)	(43.3)	(10.0)	(1.18)
Lack of awareness of where to locate information sources	6	21	18	36	9	2.77
	(6.7)	(23.3)	(20.0)	(40.0)	(10.0)	(1.12)
Inability to navigate the internet	6	15	18	45	6	2.67
	(6.7)	(16.7)	(20.0)	(50.0)	(6.7)	(1.05)
Inability to cite and quote properly	3	9	9	48	21	2.17
	(3.3)	(10.0)	(10.0)	(53.3)	(23.3)	(1.01)
weighted Mean						**3.36**

Table 5 reveals the factors that hinder research productivity of the respondents. According to the table, too much teaching load has the highest mean 4.33 response, followed by too much administrative load with mean of 3.97, no research grant had mean 3.67, financial constraints with mean value of 3.37, and unavailability of information sources 3.17. In similar vein, lack of information retrieval skills 2.80, lack of ability to source information 2.77, lack of awareness of where to locate information 2.77, inability to navigate the internet 2.67, and inability to cite and quote properly 1.01 had the least mean scores.

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H01: Information literacy skills of Management and Social Science lecturers will not significantly influence their research productivity

Table 6: Influence of Information Literacy Skills on Research Productivity of Lecturers

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.736	1	3.736	9.296	.003
	Residual	32.954	82	.402		
	Total	36.690	83			
R = .319		R Square = .102		Adjusted R Square = .091		

Table 6 reveals that a significant influence exists between information literacy skills and research productivity of lecturers in the study locale ($R = .32$, $F_{1,82} = 9.30$, $P < 0.05$). This positive significant influence indicates that when the respondents possess information literacy skills, ability to use online information sources, ability to select information most appropriate to their needs, and the ability to make citation and use quotations within the text they will be able to carry out their research work effectively. This is supported by Chinamasa (2015) who discovered in his study that research output of lecturers in higher education institutions in Zimbabwe was affected by lack of research, publishing skills and mentoring by research supervisors.

H02: Use of online collaborative tools by Management and Social Science lecturers will not significantly influence their research productivity

Table 7: Influence of Collaborative Tools on Research Productivity

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.640	1	.640	1.457	.231
	Residual	36.050	82	.440		
	Total	36.690	83			
R = .13		R Square = .017		Adjusted R Square = .005		

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Table 7 revealed that collaborative tools does not significantly influence research productivity of lecturers in the study locale ($R = .13$, $F_{1,82} = 1.46$, $P > 0.05$). This means that lecturers' research productivity is not dependent on their use of online collaborative tools.

Discussion of Findings

This study found that Management and Social Science Lecturers' had proficient level of information literacy skills. This is in dis-consonant with the findings of Rafique (2014), who studied information literacy skills of faculty members in the University of Hahore, Pakistan and discovered that majority of the faculty members are deficient in searching catalogue and its use, as well as choice of information sources, selection of relevant sources and formulation of search strategies. Also, the weighted mean 1.25 as indicated on Table 3 shows that the respondents rarely use collaborative tools in carrying out their research activities. This relates to the submission of Radloft (2001) who noted the need to encourage collaboration and team work among staff and students via collaborative like email, Skype, Google docs, Del-icio-us, and Moodle that can help staff and students in their research work. Further, this study revealed that lecturers use collaborative tools mostly to communicate, to share documents and to work with researchers outside their organization. This result is in collaboration with the finding of Naseem, Crichton, Wamakote, Ojuando and Roach (2008), who found out in their study that ICT helps the participants to communicate and collaborate for research and professional development.

Furthermore, this study noted that teaching and administrative load were the major hinderances to lecturers' productivity. This finding is similar to the studies of Chinamasa (2015) which identified huge teaching load as constraint to research output of lecturers; Zindi and Munetsi (2008) revealed environmental factors such as shortage of senior level lecturers and researchers to mentor others; Ntiamoa-Baidu (2008), Onasanya, Oduwaiye and Shehu (2010) indicated lack of training in the use of computers as tools for effective teaching and research purposes. Any of these factors or all these factors may be major hindrance(s) to research productivity of lecturers in different universities.

The study reveals that a significant influence exists between information literacy skills and research productivity of lecturers in the study locale ($R = .32$, $F_{1,82} = 9.30$, $P < 0.05$). This aligns with the findings of Madu and Dike (2012) and Nwosu, Obiamalu and Udem (2015) who found a significant relationship exist between information literacy competencies and the productivity of academic staff in North Central geographical zone, Nigeria and information literacy skills and research output of academic staff in Nnamdi Azikiwe University Awka, Nigeria respectively.

Finally, this study found that collaborative tools does not significantly influence research productivity of lecturers in the study locale ($R = .13$, $F_{1,82} = 1.46$, $P > 0.05$). This does not align with the findings Kai Wah Chu, Siu, Liang, Capio, and Wu (2013) found in their study that collaborative tools namely, MediaWiki and TWiki were regarded as suitable tools for group projects, and that they improved group collaboration and work quality. This may imply that the present study's participants engage in collaboration activities probably within their institution.

Conclusion and Recommendations

Research productivity level among Management and Social Science lecturers of Babcock University can be as a result of their information Literacy skill. Although online collaborative tools have been found to improve work productivity, lecturers' research productivity may not be a function of their use of online collaboration tools. Therefore, it was recommended that the university and library management should intensify their efforts in developing programmes and policies that will improve information literacy skills of their lecturers as this will improve their research productivity. Also, the library and information service unit of the university should organize programmes that will raise awareness on the benefits of leveraging online collaboration tools for improved research productivity. The university and heads of the schools and department should also look at address the teaching and administrative units or load to improve research productivity.

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