Computer Self-efficacy and Research Productivity of Academics at Babcock University, Ileshan-Remo, Ogun State, Nigeria

Ali Garba[1], [2]Shittu Musa, [3]Askia Nasiru Kabara and [4]Salisu Dahiru

[1&2] Kashim Ibrahim Library, Ahmadu Bello University, Zaria, Kaduna State, Nigeria
[3]University Library, Kano State University of Science and Technology, Wudil
[4]Department of Library and Information Science, Maitama Sule University, Kano, Kano State

Corresponding Author: karayeunque@gmail.com

Abstract

This study was carried out to investigate the self-efficacy and research productivity of academics at Babcock University, Ileshan-Remo, Ogun State, Nigeria. Two objectives and one hypothesis were formulated. The objectives of the study were to find out the level of research productivity and the level of computer-self efficacy of academics at Babcock University. Computer self-efficacy of the academic staff of Babcock University does not significantly determine their research productivity. A survey research design was adopted for this study. The target population of this research comprised all the academic staff working with Babcock University totalling 475. A stratified random sampling technique was used in the selection of only 20% (95) of the population. A structured self-developed 4-Likert scale questionnaire was used for data collection. It was administered to the university academic staff by the researchers with the help of two research assistants, and it has a 100% response rate. The collected data was analysed using SPSS version 21 to generate percentages, mean and standard deviation for the research questions. The inferential statistical tools of analysis; that is, regression analysis was employed to ascertain the influence of the independent variables on the dependent variable. The findings reveal that the level of research productivity of academics in BU is moderate, with a mean of 2.35 and (SD=.719). Also, their level of computer self-efficacy is high, and computer self-efficacy can determine the research productivity of academics in BU; hence, the null hypothesis is rejected. The study recommends that the management of BU and other relevant stakeholders should try to organise seminars and conferences on the importance of computer self-efficacy and research productivity among academics for overall National development.

Keywords*:* Computer Self-efficacy, Research Productivity, Academics, University, Nigeria

Introduction

Academics are the very crucial and most influential element of any academic institution, universities inclusive. University consists of lecturers and students who come together to pursue outstanding academic knowledge through teaching, learning, research, and community service. Iwe (2010) proclaims that" a university is a research engine of the society, situated in cities but not part of them". The University academics are vastly talented, highly intelligent, indulging in activities above the daily pursuits of the ordinary people. This community includes, among other professors, doctoral scholars, men, and women pursuing mastery over various specific subject fields, together with youths and teenagers undertaking the fundamentals of knowledge in diverse areas of human endeavour. This same community, as a result of its broad focus in teaching, learning, and research, create knowledge and vital information that are useful to humanity and the entire society. In universities, however, growth and development of each academic staff member rely mostly on the number and quality of their research output, which are presented in the form of journal articles, books, technical reports, and other forms of scholarly publications (Bassey, Akuegwu, Udida, and Udey, 2007).

Research productivity is used interchangeably with research output or publication output. Creswell, as cited in Okiki (2013) Research productivity is the extent to which academics engage in their research and published articles in refereed journals, conference proceedings, books, or a chapter in a book. The research outputs of academics are gathered and analysed the first evidence; they also work with postgraduate students on dissertations and class projects and obtain research grants. Other research productivity includes carrying out editorial duties, obtaining patents and licenses, writing monographs, developing experimental designs, producing works of an artistic or creative nature, engaging in public debates, and commentaries. Research productivity has become the iconic indicator of institutional prestige as one of the vital resources required by higher education institutions for maintaining operation and facilitating development and growth. In a higher institution of learning, publication records are an essential factor in terms of faculty performance evaluations and research grant awards. o salary decisions and promotion, which allow faculty members to move through the academic pipelines, academic staff, low publications output, has affected the rate of promotion of many academics. Academics research productivity is measured in many ways. Educational institutions such as Universities mostly measure research productivity based on published scholarly publications, externally funded grants, and the number of citations the published works received (Middaugh, 2001). The most common productivity measures look at publications that are submitted, accepted (in press), or published. The published works could be a journal article (refereed and non-refereed), books (including edited books and textbooks), book chapters, monographs,

conference papers, and research proposals written to receive external and internal grants (Middaugh, 2001).

It is observed that there is low research productivity among academics. Moreover, this low research might be attributed to several factors; one of such factors is insufficient time for research work. Another factor that may affect the research productivity of academic staff in any university is computer self-efficacy of the academics.

Self-efficacy as a concept was proposed by Bandura (1977), who believed that success is not only based on the possession of necessary skills but also on the confidence to use skills effectively. Self-efficacy can be seen as the assurance that one can successfully perform a task. Hence, it can be termed as an inherent belief that motivates a person to accomplish a given task based on positive self-assessment. It helps in understanding why individuals decide to focus on particular activities and the degree of effort they exert on such activities. Self-efficacy is the belief that an individual has the confidence and the ability to perform the courses of actions needed to respond to a given situation in which he has received training. Self-efficacy is an essential construct for students, particularly at the postgraduate level. This assertion was corroborated by Bandura (1997) that "People who doubt their efficacy are more likely to view repeated success as products of laborious effort than as evidence of their capability, whereas self-assured people believe more highly in their capabilities following similar successes." In other words, people with low self-efficacy, even when they can accomplish a task, see it as a "laborious effort" rather than attributing it to their ability, which makes the task unappealing. Hence, the tendency to stay away from performing such duties. On the other hand, those with high self-efficacy, attribute success to their ability, thereby making them confident and willing to pursue similar exercise (Oghenekaro, 2017).

In the use of computers, individuals can also display a level of self-efficacy, those with low self –confidence or self- efficacy may likely shy away from the use of computers. Even when they do, they might probably see it as a laborious exercise. Whereas, when computer skills are not perfect, the individual with high self-efficacy may be pushed to keep using the computer, believing that he or she is capable of utilising it, thereby, enhancing personal skills through practice. With this belief also comes the motivation to use the computer. Oghenekaro (2017) further stressed that Individual with high computer self-efficacy is more likely than others to explore new technologies, software, or databases. In terms of the use of electronic resources, it can be assumed that academics with high computer self-efficacy would be more likely to take advantage of e-resources when compared to students with low computer self-efficacy. As the later may lack the confidence or shy away from using computer-based resources.

Problem Statement

Research productivity is one of the core mandates of academics, measured by the number of scholarly publications such as journal peer-reviewed articles, books, chapters in books, book review monographs and conference papers produced by academic staff of tertiary institutions of learning (Igbal & Mahmood, 2011). For every academic staff of a university to be promoted, he/she is mandated to present a certain number of research publications. Despite this, studies conducted by Okiki, (2013) and Umar (2018) reported low research productivity among academic staff of Nigerian Universities. It is believed that there is a synergy between computer self-efficacy and research productivity, in light of the above, the researchers intend to investigate the influence of computer self-efficacy on the research productivity of academics in Babcock University, Ilisan-Remo, and Ogun State, Nigeria.

Research Objectives

The main objective of the research is to find out how computer self-efficacy influences the research productivity of the academic staff of Babcock University, Ileshan-Remo. While the specific objectives of the study are as follows:

1. To find out the level of research productivity of Academics at Babcock University
2. To ascertain the level of computer self-efficacy of academics in the Babcock University

Hypothesis

The research will test the following Null hypotheses at $\alpha = 0.05$ level of significance.

1. Computer self-efficacy of the academic staff of Babcock University does not significantly determine their research productivity.

Literature Review

Computer knowledge and skills are a significant asset that assists in retrieving relevant information required by lecturers for their teaching, learning, and research. Since lecturers need the information to excel in their academic activities, there is a need for them to be competent and adapt to the computer application in teaching, learning, and research. Mentkowski and associates (2000) stressed that basic computer knowledge, proficiency in the use of productivity software, communication skills, and internet skills are some of the fundamental skills researchers must possess to utilize the growing range of electronic information resources. Computer application in education has made a dramatic impact on the learning process as it is being used in all subject areas. Although some students are showing marked enthusiasm about using computers, others may not have the courage to use them. Students must become familiar and

comfortable with their use. Ellen, Bearden, and Sharma (1991) reported that individuals with high computer self-efficacy are less resistant to technological change. Lecturers and students require high information retrieval and computer skills to effectively utilize the information technologies which are now embraced in education. This is so because, in the opinion of Marakas, Yi, and Johnson (1998), computer self-efficacy does affect not only a person's perception of his ability to perform given tasks via computer but also his motive towards putting the computer to use in the future.

Computer skills of lecturers and students are variables that have been found to correlate with the use of electronic resources and research output. Whitmire (2001) reported in Quadri (2013) found that there was a correlation between ICT skills and library use and research productivity. More so, Sam, Othman, and Nordin (2005) carried out a study on computer self-efficacy, computer anxiety, and attitudes toward the internet. The objectives of the study were to find out the level of computer anxiety, computer self-efficacy, and the differences in computer anxiety, computer self-efficacy, attitudes toward the Internet, and reported use of the Internet-based on gender and faculty for respondents. The findings showed that respondents with better attitudes toward the Internet used it more than those who have a negative attitude towards the Internet. Likewise, undergraduates, who had a higher level of computer self-efficacy, used the Internet for product and service information." Saleh. (2008). A survey of education faculty at the Lebanese University in Beirut, Lebanon, conducted in 2006, revealed varying degrees of computer self-efficacy (CSE) of 127 respondents, 14 had low levels of CSE; 68 were at a moderate level, and 45 self-evaluated themselves to have high CSE. The results of the study show the essential significance of CSE in implementation planning, research, and faculty development.

Research productivity of academics is indeed crucial toward the rapid growth and development of academia. Okafor (2011) and Umar (2018) reported that there is low research productivity among the academic staff of Nigerian Universities. Contrary to the above views, Babalola and Nwalo (2013), cited in Yaya, Opeke, and Onouha (2016), reported that the research productivity of academics in Nigerian public universities is relatively high.

It has also been confirmed that computer self-efficacy has a positive impact on scientific research self-efficacy. Computer self-efficacy has a positive effect on information literacy self-efficacy ($\beta = 0.42$; $p = 0.001$). In the same way, it has been detected that information literacy self-efficacy positively impinges scientific research self-efficacy ($\beta = 0.54$; $p = 0.001$). It has also been detected that computer self-efficacy affects scientific research self-efficacy on level ($\beta = 0.25$ (Tuncer, 2013)

Methodology

The survey research design was adopted for this study. The survey is used to describe and interpret the existing situation, practices, beliefs, attitudes, and processes

(Oyeniyi, Abiodun, Obamero, Moses & Osibanjo, 2016). Survey research involves observing and describing the behaviour of a subject without influencing it in any way. The target population of this research comprised all the faculty academic staff working with Babcock University Ilisan-Remo Ogun State. They are summed up to 475 academic staff. A stratified random sampling technique was used in the selection of only 20% (95) of the population. Structured self-developed 4- scale questionnaire was used for data collection. The questionnaire was tagged 'computer self-efficacy and research productivity of academics at Babcock University.' It was administered to the university academic staff by the researchers with the help of two research assistants, and it has a 100% response rate. The lecturers did content validation of the instrument from the Department of Information Resources Management, Babcock University, Ilesha Remo. Reliability test was carried out at Hallmark University Ogun State. The research instrument was administered to 10 academic staff of the university. Cronbach's Alpha Coefficient was used to determine the reliability of the instrument. A reliability coefficient for each of the two sections of the instrument was 0.73 and 0.86; hence, the instrument for gathering data was reliable because each of the sections was above 60. The collected data was analysed using Software Package for Social Science (SPSS) version 21 to generate a percentage. Mean and standard deviation for the research questions, the inferential statistical tools of analysis, that is, regression analysis was done to ascertain the influence of the independent variables on the dependent variable.

Data Analysis and interpretations

Demographic information of the respondents

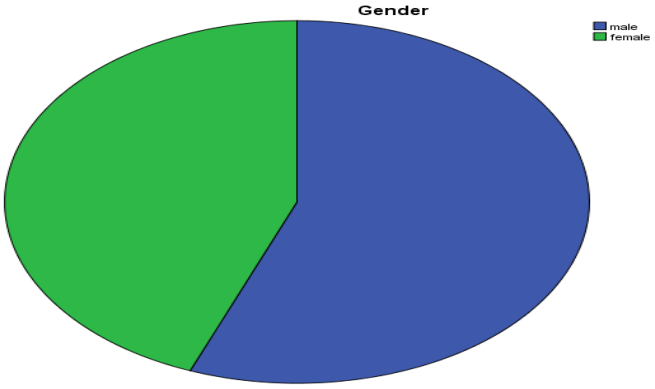

Figure 1: Gender of respondents

The result represented in figure 1 reveals that there were more male respondents in the study. The result shows that there were 47 (56%) male and 37 (44%) female academics that participated in the study.

Level of Research Productivity of Academics at Babcock University

Table 1: Research Productivity of Academics at Babcock University

Item	High (%)	Moderate (%)	Low (%)	Very low (%)	Mean	SD
Journal article	41(48.8)	29(34.5)	12(16.7)		3.32	.747
Conference proceeding	23(27.4)	28(33.3)	29(34.5)	4(4.8)	2.83	.889
Book review		14(16.7)	51(60.7)	19(22.6)	1.94	.628
Book		4(4.8)	37(44)	43(51.2)	1.54	.590
Book chapter		28(33.3)	37(44)	19(22.6)	2.11	.745
Overall mean					**2.35**	**.719**

To answer the research question on the level of research productivity of academics in Babcock University (BU), the overall mean in table 1 reveals that on the average of 2.35 (SD=.719), the level of research productivity of academics in BU is moderate. This means that it is on average. The result further explains that their journal article productivity is high (mean=3.32), conference proceeding level is moderate (mean=2.83) as well as a book chapter (mean=2.11). However, the book (mean=1.94) and book review (mean=1.94) level of productivity are low. The finding indeed contradicts the findings of Okafor (2011) and Umar (2018), who reported that there is low research productivity among academic staff of Nigerian Universities. Babalola and Nwalo (2013), cited in Yaya, Opeke, and Onouha (2016), reported that the research productivity of academics in Nigerian public universities is relatively high.

Level of computer self-efficacy of academics at Babcock University

Table 2: Computer Self-efficacy of Academics of Babcock University

Item	High (%)	Moderate (%)	Low (%)	Mean	SD
Ability to organize data using computer				**3.30**	
I can use Microsoft word and excel features to re-arrange numbers in ascending or descending order	36(42.9)	36(42.9)	12(14.3)	3.29	.704
I can use a computer to sort data for easy search	38(45.2)	34(40.5)	12(14.3)	3.31	.711
I can use the Microsoft word feature (sort) to re-arrange words in alphabetical order	39(46.4)	33(39.3)	12(14.3)	3.32	.714
Ability to organize and manage files				**3.29**	
I can use my computer to save file document	38(45.2)	32(38.1)	14(16.7)	3.29	.737

I use a computer to back-up my files in other devices (memory card, flash derive, and the like.)	36(42.9)	36(42.9)	12(14.3)	3.29	.704
Use of software packages				**3.24**	
I can use Microsoft Word to type	36(42.9)	36(42.9)	12(14.3)	3.29	.704
I can use Microsoft Excel to solve some arithmetic problems	35(41.7)	38(45.2)	11(13.1)	3.29	.687
I can use Microsoft Access to create and manage database	32(38.1)	39(46.4)	13(15.5)	3.23	.700
I can use Microsoft PowerPoint for PowerPoint presentation	32(38.1)	35(41.7)	17(20.2)	3.18	.747
Basic Computer Functions				**3.18**	
I am conversant with computer F1-F12 KEYS	32(38.1)	36(42.9	16(19)	3.19	.736
I am conversant with computer control keys functions (cont c, v, p, z, and the like)	32(38.1)	34(40.5)	18(21.4)	3.17	.758
Manipulating computer hardware				**3.17**	
I can type very fast with keyboard	32(38.1)	35(41.7)	17(20.2)	3.18	.747
I can use a computer mouse properly	40(47.6)	29(34.5)	15(17.9)	3.17	.709
I can use external storage devices (flash drive, external hard disk, etc.	29(34.5)	40(47.6)	15(17.9)	3.17	.709
Overall mean				**3.23**	**.719**

Table 2 holds the responses on the level of academics' computer self-efficacy. The result shows that academics' computer self-efficacy is high (mean=3.23, SD=.719), as expressed in the overall mean value. This is bolstered by the mean scores of the items used to measure computer self-efficacy, as revealed in table 2. The result, therefore, shows that on average, academics' ability to organize data using a computer is high (mean=3.30), the ability to organize and manage files is also high (mean=3.29). Furthermore, the same goes for the use of software packages (mean=3.24), essential computer functions (mean=3.18), and manipulating computer hardware (mean=3.17). This finding corroborates that of Saleh (2008). A survey of education faculty at the Lebanese University in Beirut, Lebanon, conducted in 2006, revealed varying degrees of computer self-efficacy (CSE) of 127 respondents, 14 had low levels of CSE; 68 were at a moderate level, and 45 self-evaluated themselves to have high CSE.

Hypothesis 1: Computer self-efficacy of the academic staff of Babcock University does not significantly determine their research productivity.

Table 3: The influence of computer self-efficacy on research productivity

Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	7.679	1.354		5.673	.000
Computer Self-efficacy	.090	.029	.320	3.062	.003
Dependent Variable: Research Productivity					
R= .320	R Square = .103		Adjusted R Square = .092		

The analysis result in table 3 reveals that computer self-efficacy (β=.320, $p < .005$) has a significant influence on the research productivity of academics in Babcock University. The result also shows that 10.3% (R Square = .103) of the changes in research productivity can be accounted for by computer self-efficacy. This suggests, therefore, that computer self-efficacy can determine the research productivity of academics in BU; hence the null hypothesis is rejected.

Conclusion

Based on the findings of this study, it is evident that computer self-efficacy can influence the research productivity of academics at Babcock university. Therefore academics should pay more attention to the skill sets to improve on areas that they are deficient in enhancing their research productivity.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The management of BU and other relevant stakeholders should try to organise seminars and conferences on the importance of research productivity among academics for overall personal, institutional, and national development.
2. The management of BU and other relevant stakeholders such as Academic Staff union should try to enlighten and educate academics on the usefulness of computer self-efficacy and its influence on modern research and development (RD)

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. Psychological Review. 84 (2), 191-215

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: W. H.Freeman & Company

Ellen, P. S., Bearden W. O. & Sharma S. (1991). Resistance to technological innovations: An examination of the role of self-efficacy and performance satisfaction. *J. Acad. Mark. Sci*., 19 (4), 297-307

Marakas, G.M., Yi, M.Y., & Johnson, R. (1998). The multilevel and multifaceted character of computer self-efficacy: Toward a clarification of the construct and an integrative framework for research. Information Systems Research, 9(2), 126-163.

Mentkowski and Associates (2000). Learning that lasts: Integrating learning, development, and performance in college and beyond. San Fransisco: Jossey-Bass

Oghenekaro, A. P. (2017). Information Literacy Skills, Computer Self-Efficacy, and E-resources use by postgraduate students in private university libraries in South-West, Nigeria. Unpublished Dissertation submitted to the Department of Information Resources, Babcock University, Ilishan Remo, Ogun State

Okafor, V. N., & Ukwoma, S. C. (2009). Students' use of electronic information sources at the University of Nigeria, Nsukka. African Journal of Library, Archives and Information Science, 19 (2), 89-97

Okiki, O. C., & Asiru, S. M. (2011). Use of electronic information sources by postgraduate students in Nigeria: Influencing Factors. Library Philosophy and Practice (e-journals).Paper 500.http://digitalcommons.unl.edu/

Protosky, D. (2002). A field study of computer self-efficacy beliefs as an outcome of training: The role of computer playfulness, computer knowledge, and performance during training. *Computers in Human Behaviour*, 18(3), 241-255

Saleh, H. K. (2008). Computer self-efficacy of university faculty in Lebanon, Educational Technology Research and Development, 56(2), 229-240.

Sam, H.K., Othman, A.E., &Nordin, Z.S. (2005). Computer self-efficacy, computer anxiety, and attitude towards the Internet: A study Among Undergraduates in Unimas. *Educational Technology and Society*. 8(4), 205-219

Tuncer, M. (2013). An analysis of the effect of computer self-efficacy over scientific research self-efficacy and information literacy self-efficacy.

Yaya, J. A., Opeke, R. O., and Onuoha, U. D. (2016). Job satisfaction as Correlates of librarians' productivity in public university libraries in Nigeria. *Library Philosophy and Practice (e-journal)*. Retrieved from http://digitalcommons.unl.edu/libphilprac/1418 on 08/02/201