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Web 2.0 Technologies Skills and Lecturers Research Productivity in Southwest State-Owned Universities

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Abstract

The level of lecturers' research productivity in tertiary institutions in Nigeria are becoming an issue of concern to collective authority and other stakeholders in the country. The study examined Web 2.0 technologies skills and lecturers research productivity in Southwest State-owned universities. It was guided by two research questions. A descriptive survey research design of correlational typed was used. The population of the study comprised 3,536 lecturers from nine state-owned universities in Southwest that has existed in the last a decade. The sample size of the study was 616 teaching staff. A multi-stage sampling technique used. Two self-developed questionnaires tagged: 'Web 2.0 Technologies Skills Questionnaire (WEBTS) and Lecturers Research Productivity Questionnaire (LRPQ) with reliability coefficients of (r = .87 & .89) were used for data collection. Research questions were answered using inferential statistics of PPMC and multiple regression. The findings of the study revealed that there was positive relationship between electronic communication skills (r = 0.737, p < .05), internet skills (r = 0.735, p < .05), proficiency in ICT skills (r = 0.500, p < .05), collaborative skills (r = 0.211, p < .05), and duplicate skills (r = 0.129, p < .05) and lecturers' research productivity. There was joint contribution of explanatory variables on lecturers' research productivity (R = 0.692, p < .05). It was concluded that explanatory variables have a substantial joint contribution on the dependent variable, with F 6, 582) = 89.277 and p < .05. The university authority should carryout investment opportunities in capacity building on how to improve lecturers Web 2.0 technology skills tailored towards ways of sourcing for data, information and knowledge sharing globally among colleagues.

Keywords: *Web 2.0 Technologies, Skills, Lecturers, Research Productivity*

INTRODUCTION

Conducting reputable research can lead to new innovation which is one of the paramount functions of a University lecturer. Although, measuring lecturer performance could take place using three indicators such as research and development, teaching and community services. But, this study only concerned on how to improve productivity of lecturer in conducting research. The role of research in economic development and prosperity in global economy cannot be overemphasizes. Research is the systematic way of findings solution to existing issues right from the olden days till now. According to Olatokunbo (2022), research is a collective efforts and investigative science that elicit information from group of people, analysis it with appropriate statistics tools to make tangible results that can leads to innovation for solving identify issue. The resultant or outcomes of a research is always being development of novel ideas and knowledge which can pass to intellectual gardening through conferences, workshop, publications, seminars among others (Vakkari, 2018). In realization of the importance of a research, Simisaye (2018) reiterated that no country of the world can

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developed without elements of research development, rather, such nation will continue to be import-depended nation when comes to new innovations. That is, new innovations needed in all is ramification and segments of the country will be imported from foreign nation.

The level of research productivity of a nation depend on the quality of the lecturer in the tertiary institutions in that county and how supportive government is to the mission (Ladipo, Alegbeleye, Soyemi & Ikonne, 2022). That is to say that production of quality research productivity by lecturer need huge resources and a nation who desire to compete with committee of nations in global research must be ready to allocate sustainable finance for research and development in universities and other tertiary institutions. Thus, research productivity can be defined as aggregate of research work conducted by lecturers within stipulated timeframe with fruitful findings contributing to knowledge (Gunawan, Barasa & Tua, 2018). Williams (2003) cited in Ladipo *et al.,* (2022) defined research productivity as research outputs taken by the researcher in conducting the study and with reliable outcomes.

Despite several definitions, the current researchers defined research productivity as the numbers, how frequent, how reliable and the aggregate numbers of publications lecturers are able to have conducted and published in a reputable academic research journal mostly a university-based journal. These researchers also depicted that research productivity of a lecturer or academic staff could also count on the total numbers of books chapters, papers presented in conferences either local or international, participations in technical review, books with co-authored as well as theses. Conducting a research with high standard which its outputs could be commercialize or share with the real sector of the economy or a research product that the university can collaborate with the industry in bringing out new products and services to the market required certain skills from the academic staff to be conducted (Ayankola & Busari, 2024). These skills according to Ayankola and Busari (2024) could relate to technology, because nowadays, no reputable research can be conducted without application of one or two usefulness of technological tools.

Technology seems to had brought new ways of sourcing for information, sharing knowledge, ideas and passing to new generation. It has also brought changing and opportunities to academic field frontier by increasing efficiency of academic staff in sourcing for needed information for research and development (Madu, Idoko, Dirisu & Emerole, 2017). Madu *et al.,* (2017) further reiterated that this technology could take different forms which include Web 2.0 technology. Ishola (2024) defined Web 2.0 technology as technologies such as wikis, Facebook, podcasting, folksonomy among others that can be adopted to develop content, ideas and knowledge for effective, interactive and collaborative knowledge development. Fernando and Tiziana (2020) asserted that Web 2.0 technologies are platforms that students, lecturers and other stakeholders in education used for passing and sharing information and they are seamless in nature.

Web 2.0 technology according to Opesanwo and Mabawonku (2016) served as information platforms academic staff can adopt to get required data for their research. Adopting this platform for research, Salawu (2022) opined that academic staff needed to have acquired some skills such as proficiency in information and communication technology skills, internet skills, electronic communication skills, collaborative skills and moving file skills. Proficiency in Information and Communication Technology (ICT) skills relate to the competencies a lecturer had acquired to effectively adopt a wide scope of digitalize tools/devices for sourcing, sharing and collaborate with others for information during the process of conducting research. Internet skills refer to the competencies lecturers used to solicitate the needed data and information sources for the purpose of conduction a research while electronic communication skills include specialized field of competencies that the lecturers adopted towards receiving and sending reports, data, knowledge and these could either be e-mailing, chart-rooms, video conferencing among others. Collaborative skills entailed competencies to work with and willingly share ideas and knowledge with colleagues in finding solution to issues in conducting research and it's also refer to aggregate competencies lecturers supposed to have to engage with colleagues and community when

conducting a research towards goals accomplishments. Moving file skills refer to competencies lecturers supposed to have acquired in getting needed digitalized files, to create a folder in different places before working on the files. The essence of this moving files includes to secure information already gotten, made a count on every source received and ability to identify designated link of the information for future usage in a research.

The level of lecturers' research productivity in tertiary institutions in Nigeria are becoming an issue of concern to collective authority and other stakeholders in the country. For that reason, records have indicated that Nigerian public universities are ranked lower globally and part of the indicators mostly used for this ranking is the level of universities research publications which was consonant with lecturers' research productivity. However, different opinions have revealed that poor rate of salary and wages paid to lecturers in our public universities have prevented many of them to solely conduct reputable research, because it had been ascertained that conducting research required huge resources. Although, government through lecturers' efforts have taken steps toward addressing this concern, which includes the establishments of TETFund to fund lecturers research, despite that, Nigerian public universities still ranked lower when compared with other African countries Universities. This study was an attempt to look at how to improve lecturers' research productivity through the applications of Web 2.0 technologies skills in Southwest State-owned universities.

The main objective of the study was to examine Web 2.0 technologies skills and lecturers research productivity in Southwest State-owned universities. Specifically, the study sought to:

1. find out the relationship between Web 2.0 technologies skills (proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skills (moving file skills) and lecturers research productivity;
2. ascertain the composite contribution of proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skill (moving file skills) on lecturers' research productivity;

The following research questions were answered in this study at 0.05 level of significance:

1. Is there any relationship between Web 2.0 technologies skills (proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skills (moving file skills) and lecturers' research productivity?
2. To what extent proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skills (moving file skills) jointly contribute to lecturers' research productivity?

METHODOLOGY

The study utilized a descriptive survey research design of correlational typed. This design was the most appropriate for this kind of study because it helped the researchers to show the correlation matrix between the explanatory and dependent variables of the study. The population of the study comprised 3,536 lecturers from nine state-owned universities in Southwest (SW) Nigeria that has existed in the last a decade (Source: Establishments office of each university, 2024). The reasons for considering only state-owned universities is the fact that the federal government pays the bill for federal universities and for states, the state governments pay the bills. The sample size of the study was 616 teaching staff (lecturers). A multi-stage sampling technique of three-stages used in this study is as follows:

Stage 1: Purposive sampling technique was first used to pick three (3) oldest state-owned university in Southwest (SW), Nigeria that had been in operation for the previous ten years.
Stage 2: Then, using the proportionate sample approach, three (3) (33.33%) of the oldest state-owned universities were chosen. The following universities were chosen:

Table 1. Selected oldest state-owned universities in Southwest, Nigeria.

S/N	Universities Name	States	Year of Establishments
1.	Olabisi Onabanjo University, Ago-Iwoye (OOU)	Ogun	1982
2.	Ekiti State University (EKSU)	Ekiti	1982
3.	Lagos State University (LASU)	Lagos	1983

Source: Researchers Field Survey, 2024.

Stage 3: From this point on, 239 teaching staff members from Lagos State University (LASU), 229 teaching staff members from Olabisi Onabanjo University (OOU), and 148 teaching staff members from Ekiti State University were chosen using a proportionate sampling technique for a total of 616 teaching staff members.

Model Specification

In this study, the model employed is presented thus:

LRP = f (PICTS, INS, ECS, COS, MFS) …… 1

LRP = a + b PICTS + c INS + d ECS + e COS + f MFS + e ……..……2

Where:

LRP = Lecturer research productivity;

PICTS = Proficiency in ICT skills

INS = Internet skills

ECS = Electronic communication skills

COS = Collaborative skills

MFS = Moving file skills or duplicate skills

e = Stochastic error terms (those factors affecting lecturers research productivity, but not captured in this study);

a, b, c, d, e, f = Parameters chosen for estimation.

The study used two researchers developed questionnaire tagged: 'Web 2.0 Technologies Skills Questionnaire (WEBTS) and Lecturers Research Productivity Questionnaire (LRPQ)'. Web 2.0 Technologies Skills Questionnaire (WEBTS) was apportioned into two sections A and B. Section A focused on the demographic characteristics of the respondents and section B explained items regarding items relating to the proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and moving file skills. Lecturers Research Productivity Questionnaire (LRPQ) also divided into two segments A and B. Segment A focused on the demographic characteristics of the respondents and B was based on the items relating to research productivity in terms of numbers of publications, how often researches are conducted and results presented in academic conferences and workshops. As well as the numbers of chapters of books carried out as lead and co-author.

These instruments are validated by three experts from Departments of Educational Technology and Counselling Psychology in Tai Solarin University of Education, Ijagun, Ogun State. All corrections identified by these experts were done before subjecting the two questionnaires to reliability testing. However, 25 lecturers from Enugu State University of Science, Agbanni, Enugu State, were given the questionnaire for pilot testing. This exercise was conducted once. The data collected from this exercise were subjected to Cronbach Alpha and this yielded .87 and .89 as reliability coefficients for the questionnaires WEBTS and LRPQ respectively. It can be deduced that these instruments would help the study elicit required data towards the achievement of objectives of the study. However, official letter from Tai Solarin University of Education, Ijagun, Ogun State was presented to the authority of the selected universities to show researchers interest and permissions were given to proceed on the exercise.

However, in terms of ethical consideration, the researchers have a briefed section with the respondents and made them understand that all the information supplied in the questionnaire was only used for this study

and no part of the information was used for other means or exposure to public. The total of 616 questionnaires were distributed for administration and only 589 copies were retrieved. It took the researchers 5-weeks for the completion of the exercise. Retrieval rate was 95.6% and it was used for the analyses. Research questions 1 and 2 were analysis using inferential statistics of Pearson Product Moment Correlation (PPMC) and multiple regression.

RESULTS AND DISCUSSION

Results

Research Question 1: Is there any relationship between Web 2.0 technologies skills (proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skill (moving file skills and lecturers research productivity?

Table 2: Correlation matrix of the explanatory and dependent variables

Variables	Mean	SD	PICTS	INS	ECS	COS	MFS	
Lecturers research productivity	47.50	4.675	1.000					
ICT skills	16.29	2.383	.500**	1.000				
Internet skills	15.66	2.338	.735**	.005	1.000			
Electronic skills	15.55	2.392	.737**	.013	.465**	1.000		
Collaborative skills	16.69	2.194	.211**	.195**	.130**	.091*	1.000	
Duplicate skills	15.79	2.240	.129**	.075	.060	.268**	.211**	1.000

Source: Researchers Field Survey, 2024

Where PICTS, INS, ECS, COS, MFS represent correlation coefficients for proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skill (moving file skills). According to Table 2, a significant correlation exists between Web 2.0 technologies skills (proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skill (moving file skills) and lecturers' research productivity. The correlations are as follows: for every electronic communication skills ($r = 0.737$, $p < .05$), internet skills ($r = 0.735$, $p < .05$), proficiency in ICT skills ($r = 0.500$, $p < .05$), collaborative skills ($r = 0.211$, $p < .05$), and moving file skills ($r = 0.129$, $p < .05$). From these results, the researchers deduced that Web 2.0 technologies skills are positive factors that can predicted lecturers research productivity.

Research Question 2: To what extent proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and moving file skills) jointly contribute to lecturers' research productivity?

Table 3. Joint contribution of explanatory variables on dependent variable in Southwest, Nigeria.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Stats				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.692[a]	.479	.474	5.25351	.479	89.277	6	582	.000

Explanatory variables: Web 2.0 technology skills
Dependent variable: Lecturer research productivity
Source: Author Field Survey, 2024.

The joint contribution of Web 2.0 technology skills on the lecturer research productivity is shown in Table 3; R = 0.692, p < .05. It was also revealed that the linear combination of the explanatory variables explained {47.4% (Adj. $R^2 = 0.474$)}, or almost 47% of the variation in lecturer research productivity was accounted for by the liner contribution of explanatory variables. It was also indicated that explanatory variables have a substantial joint contribution on the dependent variable, with $F_{6, 582)} = 89.277$ and $p < .05$.

Discussion

The findings of the study indicated that there was positive relationship between Web 2.0 technologies skills as measured by proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skill (moving file skills) and lecturers' research productivity. The implications of these were that as lecturers have these skills it will engender their level of research productivity. These findings also showed that there was joint contribution of Web 2.0 technologies skills on lecturers' research productivity and that about 47.4% increases in lecturers' research productivity could be contributed towards web 2.0 technology skills. These findings were in agreement with Opesanwo and Mabawonku (2016) who concluded that web 2.0 technology significantly influence academic staff research output and that it fortressed their skills in the best ways of sourcing data online. According to Olatokunbo (2022) who found that academic staff of university research productivity increases through usage of affordable web 2.0 technology tools and skills as well as Simisaye (2018) argued that the level of academic staff research productivity will improved through the application of social media. Vakkari (2018) believed that research output of academic staff served as university pillar to compete globally and this can be improved upon if lecturers are ready to acquired Web-2.0 technology skills to improve their level of research productivity.

CONCLUSION

The paper had examined how to improve upon lecturers' research productivity through the usage of web 2.0 technology skills and the following conclusions were drawn based on the findings that that all things being equal, Web 2.0 technology skills such as proficiency in ICT skills, internet skills, electronic communication skills, collaborative skills and duplicate skill (moving file skills) could jointly improve lecturers' research productivity.

RECOMMENDATION

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

1. The university authority should carryout investment opportunities in capacity building on how to improve lecturers Web 2.0 technology skills tailored towards ways of sourcing for data, information and knowledge sharing globally among colleagues.
2. The government through university management should further invest in lecturers' research exercises to make revenue through effective collaboration with industry in developing products and services from academic research outputs to the market.

REFERENCES

Ayankola, A. I., & Busari, I. T. (2024). Media resources' utilisation and productivity of lecturers' in public Polytechnics, South-west, Nigeria. International Journal of Librarianship, 9(1), 74-94. Retrieved from http://journal.calaijol.org

Fernando, F., & Tiziana, G. (2020). Online learning and emergency remote teaching: opportunities and challenges in emergency situations. MDPI Sustainability Journal, 86(10), 1-18. Retrieved on 21/06/2023 https://www.mdpi.com

Gunawan, A., Barasa, L., & Tua, H. (2018). Determinants of lecturers' work satisfaction and implication on lecturers' performance at Maritime Higher Education in DKI. Retrieved from https://www.econjournals.com/index

Ishola, A. M. (2024). Utilization of web 2.0 technologies as veritable tools for students learning outcomes in Ogun state owned universities. FUOYE International Journal of Business And Economics Education, 1(1), 85-95. Retrieved on https://fjbeed.fuoye.edu.ng

Ladipo, S. O., Alegbeleye, G. O., Soyemi, O. D., & Ikonne, C. N. (2022). Research productivity of lecturers in federal universities in Nigeria: The place of institutional factors. International Journal of Research in Library Science (IJRLS), 8(2), 134-150. Retrieved from www.ijrbs.nj

Madu, E. V., Idoko, A. N., Dirisu, M. B., & Emerole, N. (2017). Influence of web 2.0 technology skills on academic staff productivity in universities in north-central zone of Nigeria. Journal of Resources Development and Management, 34, 15-22. Retrieved from www.iiste.org

Olatokunbo, C. O. (2022). Research productivity of teaching faculty members in Nigerian federal universities: An investigative study. An International Electronic Journal, 36, 99-118. Retrieved from www.iclc.us/cliej/cl36okiki.pd

Opesanwo, O., & Mabawonku, I. (2016). Influence of use of social media on research productivity of lecturers in two selected universities in southwest Nigeria. Journal of Applied Information Science and Technology, 9(2), 77-89. Retrieved from https://jaistonline.org/

Salawu, S. A. (2022). Awareness and utilization of web 2.0 in sharing of knowledge among faculty members of federal school of surveying, Oyo. University of Nebraska – Lincoln. Library and Philosophy and Practice (e-journal). Retrieved from https://digitalcommons.unl

Simisaye, A. O. (2018). A study of research productivity of the academic staff in research institutes in south-west Nigeria. Retrieved from https://www.ajol.info/index

Vakkari, P. (2018). Perceived influence of the use of electronic information resources on scholarly work and publication productivity. Journal of the American Society for Information Science and Technology, 59(4), 602-612. Retrieved from https://ideas.repec.org

Williams, A. (2003). A mediated hierarchical regression analysis of factors related to research productivity of human resource education and workforce development postsecondary faculty. Doctoral Dissertation, Lousiana State University and Agricultural and Mechanical College. Retrieved from https://repository.lsu.edu