P-ISSN: 2798-1088 | P-ISSN: 2776-4060 | DOI: 10.52562/jdle.v3i1.400

Journal of Digital Learning and Education

http://journal.moripublishing.com/index.php/jdle

Social Media Use, Work Environment and Research Output of Lecturers in Private Universities in Ogun State, Nigeria

Adebowale Adetayo
Adeleke University, Loogun-Ogberin Road, Ede, Osun-State, Nigeria
*Correspondence: adebowale.adetayo@adelekeuniversity.edu.ng

Received: 5 September 2022; Accepted: 23 April 2023; Published: 24 April 2023

Abstract: This study examined the relationship between social media (SN) use, work environment (WE), and research output among lecturers in private universities in Ogun State, Nigeria. A survey research design was utilized, with a sample population of 621 lecturers from management & social science and natural & applied science in all private universities in Ogun State. Data was collected using a questionnaire, and both descriptive and inferential statistics were used to analyze the data. The findings showed that the level of output among lecturers was low, with a higher preference for publishing journal articles over other types of publications such as books and seminar papers. The extent of SN use among lecturers was found to be below average, while the quality of WE were found to be conducive for research activities. The study also revealed that SN and WE jointly influenced lecturers' research output. In conclusion, this study recommends that lecturers increase their use of SN while at the same time ensuring a conducive work environment to improve the low research output among lecturers in private universities in Ogun State, Nigeria. The combined use of SN and a supportive WE could enhance research output and contribute to the overall academic success of lecturers in private universities.

Keywords: Social Media Use, Work Environment, Research Output, Lecturers, Private Universities

INTRODUCTION

As a citadel of learning, the university is associated with teaching and research. However, the art of teaching and carrying out research revolves around the creation and dissemination of knowledge. There is a need for lecturers to participate in in-depth research to teach effectively. That is perhaps the reason a university's quality is often associated with its lecturers' research output, whose promotion depends to no small extent on the quantity and quality of their research output. For lecturers to be productive, an active engagement in research activities is needed.

According to Basiru et al. (2018), research is a very careful, observant, and vigilant study or investigation of phenomena, mainly to search and find out new particulars, information, and facts. Research in universities serves multiple purposes. It is the university's avenue to drive the social, economic, intellectual and cultural development of their immediate environments and, by extension, the worldwide community. Similarly, Adetayo (2022) concluded that academic research is the best instrument for creating awareness or improvement and facilitating learning. It is not only for the school but also for the entire scholastic world. According to Klan-Gabbay & Soham (2019), research is crucial in promoting a nation's prosperity. Research also provides means of sharpening minds, keeping abreast of developments in their field of interest, and becoming renowned in the specialization. This is perhaps the reason universities are engaged in a global arms race of publication and lecturers as the elites of the struggle. Consequently, the mantra of lecturers for decades has been to "publish or perish". Over time, awarding tenure and academic promotion has been linked to lecturers' research output.

Research output can be defined as academics' contribution to knowledge creation and dissemination through publications in learned journals and presentations at conferences (Angaiz, 2015). Adetayo et al. (2023) defined research output as the entirety of academics studies over a specified period. This can be for three years, depending mainly on the quality and quantity of scholarly publications. It appears that the number of publications constitutes the primary yardstick for measuring research output. This yardstick is based on the document-level unit of analysis, which can be additionally refined to represent publication types such as peer-reviewed journal articles, books or book chapters, thesis, trade publications, and conference proceedings. In other words, they are documents published through a peer-review process and accepted in the form of recorded sources such as books, chapters in books, conference papers and proceedings, articles in refereed journals, creative works and visual arts (Tsafe et al., 2016).

However, some factors may affect the research output of lecturers. For instance, Adegbaye et al. (2019) and Oni & Eziam (2014) indicated long working hours/time and heavy workload are significant constraints militating against the publication output of scholars as they could cause stress, thereby reducing the motivation to publish. Sassen & Wahl (2014) identify time constraints and lack of training as two possible impediments to research productivity. Also, researchers disseminate their research findings using scientific journals, conferences, workshops, and posters, which makes the dissemination of research findings slow. This implies that getting more research visibility is still dependent on disseminating research findings through other methods. Therefore, solutions are needed to overcome these obstacles so that lecturers' research productivity can improve. It appears that one of the methods that can be adopted to improve the research output of lecturers is the use of social media.

Carr & Hayes (2015) define social media are internet-based channels that allow users to interact opportunistically and selectively self-present, either synchronously or asynchronously, with engaged audiences who derive value from user-generated content and the perception of interaction with others. In line with this, Kapoor et al. (2018) stated that social media entails various user-driven platforms that facilitate the transmission of compelling content, dialogue creation, and communication to a broader audience. Such platforms allow users to interact freely, share and discuss information using a multimedia mix of personal words, pictures, video, and audio. As a web-based channel of information dissemination, social media is rapidly permeating all aspects of academic activities. It is observed that social media is increasingly becoming the most preferred means of forming social/professional networks amongst academics, although it is also being used for research (Adetayo & Williams-Ilemobola, 2021).

Kaplan & Haenlein (2010) classified social media into six broad types; namely blogs (e.g., Twitter), collaborative projects (e.g., Wikipedia), social networking sites (e.g., Facebook), content communities (e.g., YouTube), virtual social worlds (e.g., Second Life), and virtual game worlds (e.g., World of Warcraft). However, Ward et al. (2015) stated four social media categories used for research. Firstly, they include social media for searching the (scholarly)web. This allows a scholar to list their publications and highlights significant achievements. Such engines crawl the entire web, including research related pages. Examples are Google Scholar and Microsoft academy search profiles. Secondly, social media for sharing research. This helps to accelerate research outputs throughout the world. They offer quick, free, and open access to research results by taking networked information environments and partnerships. Examples are Figshare, Academia.edu and Research gate. Thirdly, social media for managing research. These are exclusive citation management software that can be used either web-based or desktops, such as CiteULike and Mendeley. Fourthly, social media for disambiguating research. This offers researchers a medium to create a unique and general identifier, for example, ORCID (Open Researcher and Contributor ID).

In general, social media help lecturers facilitate their professional contacts, disseminate research findings, and promote scientific collaboration. It allows users to upload their articles, abstracts, links to published articles, track download of their articles, engage in scholarly discussions, and exchange questions and answers with fellow users (Meishar-Tal & Pieterse, 2017). Also, Espinoza Vasquez & Caicedo Bastidas (2015) advocated that academics' social media presence

should be recognized as part of the promotion review process. This will allow academics and their affiliated universities to be visible and contribute to knowledge easily discoverable by peers. Social media can create more significant interaction and collaboration with other experts in one's field on a global scale and provides an opportunity for a researcher to benefit from other researchers' expertise. Such researchers can offer a sounding board for one's ideas before, during, or after the research process, raise the profile of research, extend the reach of research to include publications that may not have initially be considered, ultimately giving a research work an enhanced opportunity for research impact, enable users to share content quickly and help to discuss development in research (Ffloulkes & Vare, 2018).

Despite the immense benefits of social media in research-based practices such as community outreach (Agyekum et al., 2016), others have raised concerns about low social media awareness by academics (Akporhonor & Olise, 2015). Perhaps, this could hinder the effective use of social media (Amina & Nwanne, 2015; Chitumbo & Chewe, 2015). If this is the case, then it is likely that a lack of awareness of social media could impact social media use among lecturers, affecting their research output. Another factor that may have linkage to research output is work environment.

Manu (2016) defines the work environment as where a person works, which means its surroundings. The work environment is the sum of the interrelationship between employees and the environment in which they work. The work environment includes all aspects of the job that act and react to the employees' minds. According to Lubis et al. (2019), work environment is an image of the reality of work world. The work environment reveals knowledge about the lives of workers who come to work, congregate for the same reason, and follow the rules of the organization. There are different factors within the work environment, such as wages, working hours, autonomy given to employees, organizational structure, and communication between employees & management (Raziq & Maulabakhsh, 2015).

The work environment incorporates three broad categories: physical, psychological, and social. (Jain & Kaur, 2014). However, the focus of this research is the physical work environment. The physical work environment deals with the physical or tangibles at the setting where a job is performed (Adetayo et al., 2023). Arbetsgivarverket (2019) states that the physical work environment consists of desks, chairs, computers, temperature, space, ventilation, and noise. The authors noticed that if relevant facilities such as current printed materials, printers, internet/e-mail, multimedia projectors, CD-ROMs, air conditioners/fans are adequately available in the library, it will eventually enhance their job performance.

The physical work environment still plays a role in this era as it enables face-to-face contact with colleagues and can provide "a sense of belonging and can even be a place of experience" (Haynes et al., 2017). However, since universities employ diverse employees with varying levels of education and responsibility, the physical work environment setting should also be conducive to suit the differences among lecturers to reap the benefits. This would imply that the university's immediate work environment in terms of actual physical layout and design of an office is crucial for maximizing individual research output. Poorly designed workstations, unsuitable furniture, lack of ventilation, inappropriate lighting, and excessive noise could adversely affect lecturer's research output if not given adequate attention. The nature of the physical condition under which lecturers work may be essential to research output; too hot and ill-ventilated offices are unbearable to work. In a study conducted by Nguyen (2015), it is observed that the interconnected relationships among environmental factors, motivational research factors, and behavioral research factors could ultimately influence the research productivity of lecturers.

In a study by Popoola (2015), unconducive work environments with noise, poor ventilation and crowd (five staff in one office) caused dissatisfaction and brought about poor performance like lateness to work and absenteeism. The implication of this is that lecturers may be unable to perform their research, demonstrate expert knowledge of content and format of information resources, critically evaluate and filter them. Going by the above affirmation, we can infer that a work environment is crucial to the success of university research activities in Nigeria.

The main research question of this study is: What is the impact of social media use and work environment on the research output of lecturers in private universities in Ogun State, Nigeria? Specifically, this study aims to identify the factors that facilitate or hinder lecturers' use of social media for research dissemination and engagement, as well as to explore the effects of work environment on their research productivity and quality.

This topic is relevant for lecturers in private universities in Ogun State, Nigeria, because they face unique challenges and opportunities in their work environment and with social media use that affect their research productivity and quality. For instance, they may struggle with limited access to research resources, inadequate funding, and insufficient support for research activities, which can hinder their research output. On the other hand, social media platforms provide an opportunity for them to reach a broader audience, collaborate with peers, and stay up-to-date with the latest research trends. Therefore, understanding how social media use and work environment affect research output can help lecturers in private universities in Ogun State, Nigeria to optimize their research productivity and quality.

To the best of our knowledge, there has been no prior study that has investigated the impact of social media use and work environment on the research output of lecturers in private universities in Ogun State, Nigeria. However, some studies have identified factors such as research skills, funding, and academic workload as predictors of research output. While these studies have provided valuable insights into the determinants of research output, they have not examined the role of social media use and work environment, which are increasingly important in today's digital age.

Therefore, this study aims to fill this gap in the literature by examining the impact of social media use and work environment on the research output of lecturers in private universities in Ogun State, Nigeria. By doing so, this study will contribute to a better understanding of the factors that affect research productivity and quality, and provide insights into how lecturers in private universities in Ogun State, Nigeria can optimize their research output.

Objective of the Study

This study's general objective was to investigate the combined linkage of social media use and work environment on lecturers' research output in private universities in Ogun State, Nigeria. The specific objectives are to:

1. determine the extent of use of social media tools by lecturers in private universities in Ogun State, Nigeria;
2. ascertain the quality of the work environment of lecturers in private universities in Ogun State, Nigeria;
3. identify the extent of research output of lecturers in private universities in Ogun State, Nigeria;
4. examine whether the quality of the work environment is associated with research output of lecturers in private universities in Ogun State, Nigeria;
5. establish the extent to which social media use and work environment will jointly predict the research output of lecturers in private universities in Ogun State, Nigeria and
6. find out the major inhibitions encountered by lecturers towards ensuring research output.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

H_0 1: Work environment is not significantly associated with lecturers' research output in private universities in Ogun State, Nigeria.

H_0 2: Social media use and work environment will not jointly predict lecturers' research output in private universities in Ogun State, Nigeria.

METHOD

This study employed a survey research design to investigate the relationship between social media use, work environment, and research output among lecturers in private universities in Ogun State, Nigeria. The survey design was deemed appropriate for this study because it allowed for anonymity, which encouraged participants to provide honest and accurate responses.

The study population consisted of 621 lecturers from two faculties in private universities in Ogun State, Nigeria. A total enumeration technique was used to cover all 621 lecturers from private universities in Ogun State. The sample distribution is shown in Table 1. The selection of the two faculties was because they were homogeneous across the whole private universities.

Table 1. Population Distribution of Lecturers

S/N	Institution	Management & social science	Natural & applied science	Total
1.	Babcock University	132	36	168
2.	Covenant University	136	50	186
3.	Bells University of Technology	50	42	92
4.	Crawford University	26	34	60
5.	South-Western University	15	6	21
6.	McPherson University	32	12	44
7.	Crescent University	37	13	50
	TOTAL	428	193	621

The questionnaire used in this study was the Social Media Use, Work Environment, and Research Productivity (SMUWERP) questionnaire. The instrument was developed based on a review of relevant literature and subjected to an exhaustive peer-review process by experts in related fields to enhance its appropriateness and objectivity. The SMUWERP questionnaire was pretested among thirty (30) lecturers in Lead City University, Ibadan, Oyo State. Twenty-five (25) copies of the questionnaire were retrieved and subjected to the Cronbach's alpha reliability test. A section-by-section reliability test yielded the following alpha values: Social media use (α=0.86), work environment (α=0.82), and research output (α=0.95). Necessary adjustments were made to ensure that the questionnaire measures what is required to achieve the study's objectives.

All the data analyze with descriptive statistics, specifically the mean and standard deviation, were used to analyze the research objectives. Pearson Product Moment Correlation was used to test hypothesis one, which posited a relationship between work environment, and research output. Multiple Regression was used to test hypothesis two, which posited that social media use and work environment significantly predict research output. The choice of these statistical tests was based on the research questions and hypotheses, and the assumptions of these tests were met. The significance level was set at $p < 0.05$ to determine statistical significance.

RESULTS

Seven private universities were visited, and all of the schools co-operated with the researcher. 621 copies of the questionnaire were administered, but 436 copies were returned fully and appropriately filled. This represents a response rate of 70.30%. An analysis of the questionnaire by total responses indicates that Babcock University has the highest response rate of 124 (28.4%); Covenant University 109 (25.0%); Bells University of Technology 73 (16.8%); Crawford University 41 (9.4%); Crescent University 35 (8.0%); McPherson University 36 (8.3%), and South-Western University 18 (4.1%). Therefore, 436 copies of the questionnaire retrieved were used to analyze this study.

Table 2. Demographic Information of Respondents

Demographic information	f	%	Demographic information	f	%
Academic qualification			**Marital status**		
Bachelor's Extent	32	7.3	Single	57	13.1
Masters	139	31.9	Divorced	7	1.6
MPhil	88	20.2	Married	372	85.3
PhD	177	40.6	***Total***	**436**	**100**
Total	**436**	**100**	**Religion**		
Age bracket			Traditionalist	4	0.9
20-24	12	2.8	Muslim	30	6.9
25-29	42	9.6	Christian	402	92.2
30-34	77	17.6	***Total***	**436**	**100**
35-39	103	23.6	**Academic rank**		
40-44	74	17.0	Graduate Assistants	30	6.9
45-49	61	14.0	Assistant Lecturer	99	22.7
50-54	37	8.5	Lecturer 1	74	17.0
55-59	20	4.6	Lecturer 11	115	26.4
60-64	4	0.9	Senior Lecturer	66	15.1
65-69	3	0.7	Associate Professor	35	8.0
70 and above	3	0.7	Professor	17	3.9
Total	**436**	**100**	***Total***	**436**	**100**
Gender					
Female	133	30.5			
Male	303	69.5			
Total	**436**	**100**			

The study analyzed the demographic characteristics of the respondents, including their academic qualifications, gender, age, marital status, and religion. The findings revealed that the majority of the respondents had advanced degrees, with 139 (31.9%) having a master's degree and 177 (40.6%) having a PhD. This suggests that the study's participants had a high level of education and were likely to have extensive knowledge in their fields. In terms of gender, the study found that male respondents comprised a larger percentage (69.5%) than female respondents (30.5%). This gender disparity could be attributed to the underrepresentation of women in certain fields, including the one being studied.

The study also examined the age distribution of the respondents and found that the highest age group was between 35 and 39, with 103 (23.60%) participants falling within this age bracket. Meanwhile, respondents aged between 50-54 and 55-59 were 37 (8.5%) and 20 (4.6%) respectively. Interestingly, the age bracket of 60-64 had only four respondents (0.9%), indicating that the participants were generally young professionals. The age bracket of 65-69 and 70 and above had the least number of respondents, with only three (0.7%) participants each.

The study also investigated the marital status of the respondents and found that the majority of the participants were married (372 or 85.3%). This finding could suggest that the study's participants were more likely to have a stable family life and were likely to have more responsibilities outside of work. Finally, the study explored the respondents' religious affiliation and found that the majority were Christians, accounting for 402 (92.2%) participants. This finding could suggest that Christianity is the dominant religion among professionals in the field being studied.

Table 3. Extent of social media use for research

S/N	Social Media tools	VH (%)	H (%)	L (%)	VL (%)	Mean	SD
1.	Academia.edu	110 (25.2)	150 (34.4)	119 (27.3)	57(13.1)	2.72	0.985
2.	YouTube	110 (25.2)	143(32.8)	100 (22.9)	83 (19.1)	2.64	1.057
3.	LinkedIn	117 (26.8)	135 (31.0)	88 (20.2)	96 (22.0)	2.63	1.102
4.	SlideShare	99 (22.7)	135 (31.0)	130 (29.8)	72 (16.5)	2.60	1.013
5.	ResearchGate	122(28.0)	91(20.9)	116 (26.6)	107(24.5)	2.52	1.141
6.	WordPress	129(29.6)	81(18.6)	107(24.5)	119(27.3)	2.50	1.179
7.	Facebook	83 (19.0)	129 (29.6)	116 (26.6)	108 (24.8)	2.43	1.060
8.	LiveJournal	107(24.5)	93(21.3)	112(25.7)	124(28.5)	2.42	1.143
9.	Twitter	92(21.1)	110(25.2)	120(27.5)	114(26.2)	2.41	1.091
10.	Vine	78 (17.9)	129 (29.6)	112 (25.7)	117 (26.8)	2.39	1.065
11.	Vimeo	86(19.8)	114(26.1)	114 (26.1)	122(28.0)	2.38	1.092
12.	Zotero	91(20.9)	92(21.1)	105(24.1)	148(33.9)	2.29	1.142
13.	Delicious	81 (18.6)	94 (21.6)	119 (27.3)	142(32.5)	2.26	1.104
14.	Diigo	79(18.1)	91(20.9)	100 (22.9)	166 (38.1)	2.19	1.132
15.	MySpace	56 (12.9)	99 (22.7)	148 (33.9)	133 (30.5)	2.18	1.008
16.	Mendeley	70 (16.1)	98 (22.4)	98 (22.5)	170 (39.0)	2.16	1.111
17.	CiteULlike	62 (14.2)	91 (20.9)	114 (26.1)	169 (38.8)	2.11	1.075
18.	BibSonomy	74(17.0)	82(18.8)	94 (21.5)	186 (42.7)	2.10	1.134

VH= Very High; H=High; VL=Very Low; L=Low

The study analyzed the extent of social media tool usage among the participants, as detailed in Table 3. The results indicated that the participants generally used social media tools to a low extent, with a mean score of 2.39. This finding could suggest that professionals in the field being studied may not rely heavily on social media tools for their work-related activities.

However, the study found that certain social media tools were used more extensively than others. Academia.edu was the most widely used tool, with a mean score of 2.72, indicating that the participants valued its collaborative features for sharing research and academic papers. YouTube and LinkedIn also had high mean scores of 2.64 and 2.63, respectively, suggesting that professionals in the field may use these platforms for video content and networking purposes. Interestingly, these three social media tools fell into different categories, with Academia.edu being a collaborative tool, YouTube a video platform, and LinkedIn a social networking tool. This finding could suggest that professionals in the field may use social media tools for various purposes and not just for research and academic activities.

Other collaborative tools such as SlideShare and ResearchGate also had relatively high mean scores, occupying the fourth and fifth positions, respectively. WordPress, a blogging platform, had an average mean score of 2.50, suggesting that professionals in the field may use it to share their thoughts and ideas. However, social bookmarking and citation tools recorded the least use rating, with CiteULike and BibSonomy taking the 17th and 18th positions, respectively, with mean scores of 2.11 and 2.10. This finding could suggest that professionals in the field may not prioritize these tools when it comes to their work-related activities.

Table 4. Quality of Work Environment

S/N	Work environment	SA (%)	A (%)	DS (%)	SDS (%)	Mean	SD
1.	The air quality in my office is appropriate	110 (25.2)	173 (39.7)	90 (20.6)	63 (14.5)	2.76	0.990
2.	My office has appropriate lighting	113 (25.9)	150 (34.4)	95 (21.8)	78 (17.9)	2.68	1.046
3.	The temperature in my office is moderate	103 (23.6)	156 (35.8)	109 (25.0)	68 (15.6)	2.67	1.003
4	My office layout provides privacy	85 (19.5)	188 (43.1)	87 (20.0)	76 (17.4)	2.65	0.984
5.	My office is well ventilated	89	137	174	36	2.64	0.898

S/N	Work environment	SA (%)	A (%)	DS (%)	SDS (%)	Mean	SD
		(20.4)	(31.4)	(39.9)	(8.3)		
6.	My work environment is free from distracting or disruptive noises	90 (20.7)	175 (40.1)	86 (19.7)	85 (19.5)	2.62	1.020
7.	My work environment is comfortable.	60 (13.8)	216 (49.5)	78 (17.9)	82 (18.8)	2.58	0.947
8.	My office has adequate infrastructure	83 (19.0)	165 (37.9)	100 (22.9)	88 (20.2)	2.56	1.017

SA= Strongly Agree; A=Agree; DS=Disagree; SDS=Strongly Disagree

The study examined the quality of the work environment of the lecturers, as detailed in Table 4. The results indicated that, on average, the lecturers perceived their work environment to be averagely conducive, with a mean score of 2.65. This finding could suggest that there is room for improvement in the work environment to increase the comfort and productivity of the lecturers.

The study further examined specific factors that contributed to the quality of the work environment. The air quality of the work environment was found to be the most conducive, with a mean score of 2.76 and a standard deviation of 0.990, indicating that the participants perceived the air quality to be of good quality. Lighting and moderate temperature were also considered to be conducive, with mean scores of 2.68 and 2.67, respectively, indicating that the participants were comfortable with the lighting and temperature levels in their work environment.

Privacy and ventilation also received relatively high mean scores of 2.65 and 2.64, respectively, indicating that the participants perceived their work environment to be sufficiently private and well-ventilated. On the other hand, noise was the factor that received the lowest mean score of 2.62, suggesting that the participants may have perceived noise levels to be a potential source of distraction or discomfort in their work environment. Finally, the comfort level and infrastructure of the work environment were rated fairly conducive, with mean scores of 2.58 and 2.56, respectively. This finding suggests that while the participants were comfortable with the air quality, lighting, temperature, privacy, and ventilation of their work environment, there may be room for improvement in the overall comfort and infrastructure of the workplace.

Table 5. Extent of Research Output

S/N	Publications	12 & above (%) (4)	8-11(%) (3)	4-7(%) (2)	1-3(%) (1)	Nothing (%) (0)	Mean	SD
1	Journal articles	78(17.9)	81(18.6)	124(28.4)	103(23.6)	50(11.5)	2.08	1.262
2.	Chapters in edited books	57(13.1)	79(18.1)	81(18.6)	108(24.8)	111(25.4)	1.69	1.370
3.	Textbooks	56(12.8)	63(14.4)	55(12.6)	98(22.4)	164(37.6)	1.42	1.436
4.	Workshop and seminar papers	37(8.5)	30(6.9)	86(19.7)	183(42.0)	100(22.9)	1.36	1.157
5.	Co-authored textbooks	49(11.2)	62(14.2)	55(12.6)	81(18.6)	189(43.4)	1.31	1.430

Table 5 presents the findings of the study on the extent of research output among the lecturers. The results indicate that, on average, the respondents had a low research output, with a mean score of 1.57. This finding suggests that there may be a need to encourage and support lecturers in increasing their research output.

The study further examined the types of publications that were most common among the respondents. Journal articles were found to be the most published, with a mean score of 2.08, indicating that the respondents placed high value on publishing journal articles. This finding is not surprising, as publishing in reputable journals is often associated with career progression and promotion for academics. Chapters in edited books also received a relatively high mean score of

1.69, indicating that this type of publication was not uncommon among the respondents. Textbooks, workshop and seminar papers, and co-authored textbooks, on the other hand, were found to be the least published, with mean scores of 1.42, 1.36, and 1.31, respectively. These findings suggest that lecturers may need more support and resources to publish different types of publications, especially those that are not as common among them.

Table 6. Major Inhibitions Towards Ensuring Research Output

S/N	Inhibitors to research output	SA (%)	A (%)	DS (%)	SDS (%)	Mean	SD
1.	Slow internet connectivity	81(18.6)	177(40.6)	127(29.1)	51(11.7)	2.66	0.912
2.	Too many information resources on social media	70(16.1)	187(42.9)	116(26.6)	63(14.4)	2.61	0.922
3.	Inadequate infrastructural provision by management	85(19.5)	152(34.9)	141(32.3)	58(13.3)	2.61	0.947
4.	Lack of privacy at work	80(18.3)	121(27.8)	179(41.1)	56(12.8)	2.52	0.936
5.	Distracting ambient noises.	77(17.6)	143(32.8)	138(31.7)	78(17.9)	2.50	0.981
6.	Lack of time to use social media tools.	68(15.6)	141(32.3)	149(34.2)	78(17.9)	2.46	0.959
7.	Cramped offices	67(15.4)	115(26.4)	180(41.3)	74(16.9)	2.40	0.943
8.	Inadequate knowledge of search techniques necessary for retrieving information effectively	60(13.8)	127(29.1)	168(38.5)	81(18.6)	2.38	0.941
9.	Insufficient lighting to perform task	60(13.8)	121(27.7)	153(35.1)	102(23.4)	2.32	0.981
10.	Social media tools are too technical to use.	38(8.7)	135(31.0)	144(33.0)	119(27.3)	2.21	0.943

SA= Strongly Agree; A=Agree; DS=Disagree; SDS=Strongly Disagree

The findings from Table 6 provide insight into the significant barriers that lecturers face in using social media for research purposes. It was revealed that the lecturers faced several challenges, with slow internet connectivity being the most significant barrier, with a mean score of 3.23. This result suggests that the internet's speed is a significant factor in social media usage for research purposes. The second most significant barrier was too many information resources on social media, with a mean score of 3.03. This indicates that the vast amount of information on social media can be overwhelming for lecturers, making it difficult to find relevant and useful information.

Inadequate infrastructural provision was the third most significant barrier, with a mean score of 2.95. This result suggests that the lack of adequate resources, such as computers and internet access, can hinder the use of social media for research purposes. The lack of privacy at work was also identified as a significant barrier, with a mean score of 2.83, suggesting that lecturers may be hesitant to use social media at work due to concerns about their privacy. Distracting ambient noises were the fifth most significant barrier, with a mean score of 2.53, suggesting that environmental factors can also affect the use of social media for research purposes. Inadequate knowledge of search techniques, insufficient lighting, and social media tools' technicality were the least significant barriers, with mean scores of 2.38, 2.32, and 2.21, respectively. This result implies that lecturers have a basic understanding of social media tools and search techniques, and lighting conditions are not significant hindrances in their use of social media for research purposes.

Table 7. Relationship Between Work Environment and Research Output

Variables	N	Mean	SD	R	Sig.	Remark
Work environment	436	2.6411	0.72434	0.417**	0.000	Significant
Research output	436	1.6000	0.70597			

The results of the data analysis on the relationship between work environment and research output, as presented in Table 7 suggest that there is a significant and positive association between these two variables. The correlation coefficient (r) was 0.417, which indicates a weak but significant relationship between work environment and research output. The p-value was less than 0.05, indicating that the correlation is statistically significant.

The strength of the relationship between work environment and research output was found to be 41.7%, indicating that an increase in the quality of work environment is associated with an increase in research output. Thus, the alternative hypothesis, which suggests a positive relationship between work environment and research output, is accepted, while the null hypothesis, which suggests no relationship between these variables, is rejected.

Table 8. Relationship Between Social Media Use, Work Environment and Research Output

ANOVA[a]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	37.832	2	18.916	45.765	.000[b]
Residual	178.968	433	0.413		
Total	216.800	435			
R=0.418[a] R Square=0.175 Adjusted R Square=0.171					

Predictors: (Constant): social media use, work environment
Dependent Variable: research output

The R square value of 0.175 indicates that social media use and work environment jointly explain 17.5% of the variation in research output. This suggests that other factors not considered in the study also influence research output. However, the p-value of .000b is less than the significant level of 0.05, indicating that the relationship between social media use, work environment, and research output is statistically significant. Hence, the null hypothesis is rejected, and the alternative hypothesis is accepted.

The results also showed that both social media use and work environment significantly contributed to research output. Therefore, it can be inferred that lecturers in private universities in Ogun State, Nigeria, need a conducive work environment and high social media use to increase their research output. However, the remaining 82.5% of the variation in research output is attributed to other factors not examined in the study. These could include funding, time constraints, workload, and personal factors, among others.

DISCUSSION

It was predicted that social media would give people, especially consumers, more power. This beckon for people of all classes to use it (Adetayo, 2021). This article showed that social media tools were generally used to a low extent, though the study affirmed that lecturers have a high use for Academia.edu, YouTube, Linked In, SlideShare, ResearchGate and WordPress, Mendeley, CiteULike, and BibSonomy are least used. The finding in this case partially agrees with the finding of Cruz & Jamias (2013), which revealed that social networking, scientific article sharing, and

collaborative authoring tools are most useful in the research process while microblogging and conferencing are the least useful. This is arguably so as Academia.edu, SlideShare, and LinkedIn fall within social networking, scientific article sharing, and collaborative authoring tools. However, the findings disagree that the least used social media tools for research as social citation and bookmarking tools were found to have the lowest extent of use.

Based on the findings, this study affirms that the quality of lecturer's work environment was conducive. However, there was a varying extent of quality of the work environment. The highest conducive areas were appropriate air quality, appropriate lighting, moderate temperature, while the moderately conducive areas were comfort and infrastructure. This is in line with Ajayi et al. (2011), who revealed that academic staff perceives their work environment to be conducive. However, this contrasts with certain studies revealing that the universities' work environment is not conducive (Oyetunji, 2014). It could be that such viewpoint based its result on the quantity and quality of universities physical facilities, which compose of just one out of many constituents of the work environment. It may also be because other non-private universities were included in the study, whose facilities are not often continuously maintained.

Findings show that lecturers' research output in private universities in Ogun State was low, with journal publications being the most published and chapters in edited books, textbooks, workshop & seminar papers, and co-authored textbooks being the least published. Low research output could be due to the lecturer's dual nature, which involves teaching and research. It could also be due to the research output barriers, which was found out in the study. This study's result is in line with Okiki (2013) findings, which asserts that journal articles are the most published in Nigerian universities, followed closely by conference papers, then book chapters, while textbooks and co-authored textbooks were less published. In line with this, Uluocha & Mabawonku (2014) study on law lecturers' research output in Nigerian universities revealed that journal publications are the most published. To this end, practical recommendations and interventions that institutions can implement to enhance the quality of the work environment or improve access to social media tools to facilitate research output would be helpful. Future research could also explore the factors that enable lecturers to conduct research, such as funding opportunities, mentorship, collaboration, and training programs.

The study shows that the major barriers that lecturers encountered to research output are slow Internet connectivity, inadequate infrastructural provision by university management, voluminous information resources on social media, lack of privacy at work, and distracting ambient noises. It is not surprising that slow Internet connectivity tops the barriers list, which is a major concern for many institutions. It is also a major factor hindering access to research information. These findings align with Okiki (2013), which confirmed that slow Internet connection is the major barrier to research output. This could be due to the amount of money it takes to get a good Internet connection, which many institutions cannot afford.

The study shows that the of work environment has a significant relationship with lecturers' research output in private universities in Ogun State, Nigeria. In agreement with Dabara et al (2019) findings, there is a strong positive significant relationship between work environment and lecturers productivity. The findings are also consistent with Vuong et al (2019) findings, whose study revealed that work environment affects social scientists' adjusted research productivity. It can be implied from the findings that research output increases with an increase quality in work environment. The more an individual feels comfortable within an office's immediate environment, the more likely they will be more creative and become more productive.

The study showed that social media use and work environment would predict lecturers' research output in private universities in Ogun State, Nigeria. However, social media use and work environment account for only 17.5 % of research output. Other factors apart from social media and work environment predict research output since 82.5% is not accounted for in the study. This finding supports Wood (1990) study with Australian universities' teaching staff that found that motivation, ambition, self-discipline, and ability to work are important factors that affect university academicians' research output. Also, Rasheed et al (2010) findings state that job design, work

environment, career development, recognition & rewards, feedback, participation in decision-making, and empowerment are elements of an organization that motivate teachers in higher institutions. Other elements of an organization, such as job design, career development, recognition & rewards, feedback, participation in decision-making, and empowerment, can also motivate lecturers in higher institutions to increase their research output.

CONCLUSION

In conclusion, this study aimed to investigate the combined linkage of social media use and work environment on lecturers' research output in private universities in Ogun State, Nigeria. To achieve this goal, the study addressed the following specific objectives: to determine the extent of social media use among lecturers, to ascertain the quality of the work environment, to identify the extent of research output, to examine the association between work environment and research output, to establish the joint prediction of social media use and work environment on research output, and to determine the major inhibitions towards ensuring research output. The findings of this study indicate that social media and work environment are positively related to and contribute to lecturers' research output. In terms of social media usage, lecturers highly utilize Academia.edu, YouTube, LinkedIn, SlideShare, ResearchGate, and WordPress for research purposes. However, the research output of lecturers was found to be low, with journal publications being the most published and chapters in books, textbooks, workshops & seminar papers, and co-authored textbooks being the least. Therefore, this study's main contribution is to emphasize the importance of social media use and work environment in improving lecturers' research productivity in private universities in Ogun State, Nigeria. The findings suggest that management should provide a more conducive environment to promote research output, and lecturers should improve their social media usage to enhance their research productivity. To summarize, this study has answered the research question of how social media use and work environment jointly affect lecturers' research output. Based on the findings, it is concluded that social media use and work environment significantly contribute to research output. In addition, the study highlights the need for private universities in Ogun State, Nigeria, to prioritize the promotion of research output and suggests that future research should explore how other factors may influence research productivity. Therefore, this study has significant implications for university management and policy-makers who aim to improve research productivity in private universities in Ogun State, Nigeria.

REFERENCES

Adegbaye, S. I., Okorie, N. C., Wagwu, V., & Ajiboye, B. A. (2019). Workload as Correlate of Publication Output of Academic Librarians in Universities. *Unizik Journal of Research in Library and Information Science (UJOLIS)*, *4*(1), 68–83.

Adetayo, A. J. (2021). Fake News and Social Media Censorship. In R. J. Blankenship (Ed.), *Deep Fakes, Fake News, and Misinformation in Online Teaching and Learning Technologies*. IGI Global. https://doi.org/10.4018/978-1-7998-6474-5.ch004

Adetayo, A. J. (2022). Research Output and Visibility of Librarians: Are Social Media Influencers or Distractors? *Journal of Librarianship and Information Science*, 09610006221106177.https://doi.org/10.1177/09610006221106177

Adetayo, A. J., Adeleke, O. A., & Lateef, E. B. (2023). Does the Physical Work Environment of Librarians Influence Research Productivity? *Portal: Libraries and the Academy*, *23*(1), 23-33. https://doi.org/10.1353/PLA.2023.0006

Adetayo, A. J., Oketunji, I., & Hamzat, S. A. (2023). Mentoring Support for Librarians' Research Productivity in Southwestern Nigeria: A study of quantity of publications in quality outlets and online channels. *The Journal of Academic Librarianship*, *49*(1), 102625. https://doi.org/10.1016/J.ACALIB.2022.102625

Adetayo, A. J., & Williams-Ilemobola, O. (2021). Librarians' Generation and Social Media Adoption in Selected Academic Libraries in Southwestern, Nigeria. *Library Philosophy and Practice (e-journal)*, *4984*, 1-22.

Basiru, A., Okwilagwe, O. A., & Adebayo, E. L. (2018). Knowledge of Electronic Databases as Predictors Research Productivity of Academic Staff in Nigerian Private Universities. *Library Philosophy and Practice*, 1780

Agyekum, B. O., Arthur, B., & Trivedi, M. (2016). Adoption of Social Networking Tools in Public University Libraries in Ghana. *International Journal of Innovative Research and Development*, *5*(5), 158-168.

Ajayi, I. A., Awosusi, O. O., Arogundade, B. B., & Ekundayo, H. T. (2011). *Work Environment as Correlate of Academic Staff Job Performance in South-West Nigerian universities*. *3*(1), 1–6.

Akporhonor, B. A., & Olise, F. N. (2015). Librarians' Use of Social Media for Promoting Library and Information Resources and Services in University Libraries in South-South Nigeria. *Information and Knowledge Management*, *5*(6), 1–8.

Amina, B. B., & Nwanne, O. F. (2015). Challenges Librarians Encounter in the Use of Social Medial for Promoting Library and Information Resources and Services in University Libraries in South-South, Nigeria. *International Journal of Humanities and Social Science*, *5*(6), 208–214.

Angaiz, D. (2015). *An investigation of determinants of Teacher Education Faculty Research Productivity in Public Sector Universities of Pakistan*. Dowling College.

Arbetsgivarverket. (2019). *Swedish Agency for Government Employers*. https://www.arbetsgivarverket.se/in-english/

Carr, C. T., & Hayes, R. A. (2015). Social Media: Defining, Developing, and Divining. *Atlantic Journal of Communication*, *23*(1), 46–65. https://doi.org/10.1080/15456870.2015.972282

Chitumbo, E. M. M., & Chewe, P. (2015). Social Media Tools for Library Service Delivery in Higher Learning Institutions: Case of University of Zambia and National Institute of Public Administration Libraries. *Research Journal of Library Sciences*, *3*(5), 1–7.

Cruz, F., & Jamias, S. B. (2013). Scientists' Use of Social Media: The Case of Researchers at the University of the Philippines Los Baños. *First Monday*, *18*(4). https://doi.org/10.5210/fm.v18i4.4296

Dabara, D. I., Soladoye, J. O., Omotehinse, O. J., Lawal, O. K., & Asa, O. A. (2019). Work Environment and Lecturers' Productivity in Selected Higher Institutions in Osun Nigeria. *Proceedings of 74th Researchfora International Conference*.

Espinoza Vasquez, F. K., & Caicedo Bastidas, C. E. (2015). Academic Social Networking Sites: A Comparative Analysis of Their Services and Tools. *IConference 2015 Proceedings*.

Ffloulkes, R., & Vare, N. (2018). *How to Disseminate Your Research Via Social Media*. http://www.emeraldpublishing.co.uk/promo/social_media.htm

Haynes, B., & Nunnington, N. (2010). *Corporate Real Estate Asset Management: Strategy and Implementation*. Estates Gazette.

Jain, R., & Kaur, S. (2014). Impact of Work Environment on Job Satisfaction. *International Journal of Scientific and Research Publications*, *4*(1), 1–8.

Kaplan, A. M., & Haenlein, M. (2010). Users of the World, Unite! The Challenges and Opportunities of Social Media. *Business Horizons*, *53*(1), 59–68. https://doi.org/10.1016/j.bushor.2009.09.003

Kapoor, K. K., Tamilmani, K., Rana, N. P., Patil, P., Dwivedi, Y. K., & Nerur, S. (2018). Advances in Social Media Research: Past, Present and Future. *Information Systems Frontiers*, *20*(3), 531–558. https://doi.org/10.1007/s10796-017-9810-y

Klain Gabbay, L., & Shoham, S. (2019). The role of academic libraries in research and teaching. *Journal of Librarianship and Information Science*, *51*(3), 721–736. https://doi.org/10.1177/0961000617742462

Lubis, S. M., Dalimunthe, R. F., & Siahaan, E. (2019). The effect of learning organizations, achievement motivation through work environment as a moderating variable on the job satisfaction of temporary employees'(non-medical) in the administration service of North Sumatra University Hospital Medan, Indonesia. *European Journal of Human Resource Management Studies*. http://dx.doi.org/10.46827/ejhrms.v0i0.604

Manu, C. A. (2016). *The Effects of Work Environment on Employee's Productivity in Government Organizations. A Case Study of Obuasi Municipal Assembly* (Doctoral dissertation).

Meishar-Tal, H., & Pieterse, E. (2017). Why do Academics Use Academic Social Networking Sites? *International Review of Research in Open and Distributed Learning*, *18*(1), 1–22. https://doi.org/10.19173/irrodl.v18i1.2643

Nguyen, Q. H. (2015). Factors Influencing the Research Productivity of Academics at The Research-Oriented University in Vietnam. *Vietnam: Griffith University*. https://doi.org/10.25904/1912/1578

Okiki, O. C. (2013). Research Productivity of Teaching Faculty Members in Nigerian Federal Universities: An Investigative Study. *Chinese Librarianship: An International Electronic Journal*, 36.

Oni, O., & Eziam, A. (2014). Publication Output of Librarians in University Libraries in Edo and Delta States of Nigeria. *Palgo Journal of Education Research*, *2*(5), 128–139.

Oyetunji, C. O. (2014). Lecturers' Perceptions of Open-Plan Office in Tertiary Institutions. *Journal of Education and Training*, *1*(1), 27–38. https://doi.org/10.5296/JET.V1I1.4644

Rasheed, M. I., Aslam, H. D., & Sarwar, S. (2010). Motivational Issues for Teachers in Higher Education: A Critical Case of IUB. *Journal of Management Research*, *2*(2), 3. https://doi.org/10.5296/JMR.V2I2.349

Raziq, A., & Maulabakhsh, R. (2015). Impact of Working Environment on Job Satisfaction. *Procedia Economics and Finance*, *23*(1), 717–725. https://doi.org/10.1016/s2212-5671(15)00524-9

Sassen, C., & Wahl, D. (2014). Fostering Research and Publication in Academic Libraries. *College and Research Libraries*, *75*(4), 458–491. https://doi.org/10.5860/crl.75.4.458

Tsafe, G., Basaka, basaka abubakar, & Mohammed, C. (2016). Scholarly Publications of Librarians

in Universities in Nigeria: 2000 2012 -- A Bibliometric Analysis. *Library Philosophy and Practice (e-Journal)*, *1394*.

Uluocha, A., & Mabawonku, I. (2014). Legal Information Resources Availability and Utilisation as Determinants of Law Lecturers Research Productivity in Nigerian universities. *Information and Knowledge Management*, *4*(9), 50–58.

Vuong, Q. H., Napier, N. K., Ho, T. M., Nguyen, V. H., Vuong, T. T., Pham, H. H., & Nguyen, H. K. T. (2019). Effects of Work Environment and Collaboration on Research Productivity in Vietnamese Social Sciences: Evidence From 2008 To 2017 Scopus Data. *Studies in Higher Education*, *44*(12), 2132–2147. https://doi.org/10.1080/03075079.2018.1479845

Ward, J., Bejarano, W., & Dudás, A. (2015). Scholarly Social Media Profiles and Libraries: A review. *LIBER Quarterly*, *24*(4), 174. https://doi.org/10.18352/lq.9958

Wood, F. (1990). Factors Influencing Research Performance of University Academic Staff. *Higher Education*, *19*(1), 81–100. https://doi.org/10.1007/BF00142025