Social network sites and professional development of lecturers

Nimota Jibola Kadir Abdullahi [1], University of Ilorin, Faculty of Education, Department of Educational Management, Ilorin, Nigeria

Abstract

This study investigated Social Network Sites and the Professional development of lecturers in Kwara State, Nigeria. The purposes of this study are to investigate the correlation between Google Scholar, ResearchGate, and Academia.edu and the professional development of lecturers in three selected universities. A quantitative research design was used in the study. A purposive sampling technique was used to select 120 participants from the sample universities. The researcher looks into the population of academics who engage in using three indicators of Social Network Sites. Pearson product-moment correlation and linear regression analysis were used to analyze the gathered data. The findings revealed that Google Scholar, ResearchGate, and Academia.edu were positively and significantly correlated with the professional development of lecturers. Therefore, it was recommended that lecturers should keep making use of Google Scholar to arouse interest in publication. Furthermore, lecturers should improve on the use of ResearchGate to increase the visibility and impact of their works.

Keywords: Collaborative learning, effective communication, Google scholar, ResearchGate, professional development;

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* ADDRESS FOR CORRESPONDENCE: Nimota Jibola Kadir Abdullahi, University of Ilorin, Faculty of Education, Department of Educational Management, Ilorin, Nigeria.
E-mail address: abdullahi.njk@unilorin.edu.ng

1. Introduction

Social Network Sites (SNSs) are online communities that bring together people with common interests, opinions, experiences, and activities by sharing their ideas, knowledge, and events (Le et al., 2022). Some of the most popular SNSs for the professional development of lecturers are Google Scholar, ResearchGate, Academia.edu, Mendeley, LinkedIn, and the like. SNSs have always been seen as a strong force that has to improve virtually all areas of personal, social, and professional development of human life. With the help of SNS, lecturers can now have easy access to experts, researchers, professionals, and peers around the world. SNS has the potential to accelerate, enrich, enhance, and deepen skills as well as strengthen the professional development of academic staff.

Lecturers could update and acquire new skills and knowledge through effective professional development. Academics often cite the need for professional development to be useful, relevant, and appropriate. This implies that lecturers need to renew their knowledge daily to improve their teaching careers. Furthermore, lectures need an enabling environment to enhance their professional development (Patahuddin et al., 2022). As universities become more independent, with an open learning environment, lecturers assume greater responsibility for improving the learning activity as well as their progress.

Several studies have been carried out on the social network and academic life in higher education. Doaa (2015) carried out social networking sites ad awareness of academic staff at South Valley University, Egypt. Ishfaq and Tehmina (2011) researched student-based perspectives on SNSs. A sample of 1000 students was selected from Pakistan universities. A simple random sampling technique was used to select six universities. The finding revealed that SNSs have no impact on student's academic performance. Raymond and Afua (2016) investigated social media and student academic life in higher institutions.

Forkosh-Baruch et al. (2015) conducted SNSs as mediated communication for teacher-student relationships. A sample of 160 teachers and 587 students was chosen for the study. Inferential statistical analysis was used to analyze the data collected. The finding revealed that students who were making use of the social network for learning perform better than those who were not ready to use the social network.

1.2. Literature Review

1.2.1. *SNSs*

SNS is described as a public web-based service for the development of a personal profile, recognizing other connected users, and reacting to activities that relate to publications as well as sending and receiving messages privately or publicly (Ellison, 2007). it is an online tool used to develop academic professional networks of researchers as well as improve their activities while carrying out research (Jeng et al, 2012). This explains that lecturers join these sites to increase their professional development and visibility. It is also an ecosystem of software services, online communication platforms, and repositories that give academics the prospect of accessing lots of articles relating to their area of specialization, sharing knowledge and promoting collaboration, and managing the reputation of researchers and institutions (Miguez-Gonzalez et al, 2017).

SNS allows users to upload academic abstracts and articles link to published articles as well as professional interaction, discussion, and exchange of questions and answers with users. SNS in this study refers to Google Scholar, ResearchGate, and Academic.edu used by the lecturers to enhance their professional development. The three SNSs examined in this study have similar characteristics, they are specific to researchers affiliated with academic institutes and specialized in academic activities.

1.2.2. Google Scholar and Professional Development of Lecturers

Google Scholar was created by Alex Verstak and Anurag Acharya on November 20, 2004. Google Scholar is a social research-sharing platform and easily accessible web search engine that provides the different texts of Scholarly articles across disciplines. It allows researchers to upload full-text versions of their publications and reports in form of pre- or post-print manuscripts to share them with other members openly. Google Scholar contains publications in the form of science, social science, engineering, arts, humanities, and medicine. It is used by over 10,000 academics, government, and corporate institutions. Academics usually regard Academic Social Networks sites as an integral part of their professional identity element or as a repository for their published articles (Williams & Melissa, 2016). The crucial aspect of social networking is the ability to provide an answer to a different question quickly and easily.

1.2.3. ResearchGate and Professional Development of Lecturers

ResearchGate is a social network developed in 2008 by Ijad Madisch, Soren Hofmayer, and Horst Fickenscher. Today the site has got not <16 million members from different continents. It has its headquarters in Berlin. The site furnishes users with news feeds and updates on their uploaded articles, endorsing researchers for their expertise, and skillfulness as well as a hint on new researchers to follow. ResearchGate goals are to share and follow research as it inspires researchers to upload their published articles to their profile pages and make them available for others following that tag to view and the general public for free. ResearchGate gives a score of researchers' assessment based on publication downloads, number of views, and citation count (Alheyasat, 2015). ResearchGate aid effective visibility of researchers' publications which serve as an encouragement for lecturers to improve academically.

1.2.4. Academia.edu and Professional Development of Lecturers

Academia.edu is a social networking service developed in 2008 by Richard Price with over 70 million accounts. Its headquarters is in San Francisco. This site provides a prompt news feed that notifies users of new uploads of books and publications. The SNS is an important element that provides academic settings with new knowledge about teaching practices and new research findings as well as news about the profession among Scholars.

1.2.5. Professional Development of Lecturers

Professional development is a continuous improvement of skills and job performance of staff. Professional development is regarded as professional growth, in-service education, or on-the-job training (Okeke, 2010; Chen et al., 2020; Thomson et al., 2022). This means that people want to feel good in their job and they also have a genuine sense of learning, growing, and developing as persons in their profession to contribute to the success of the organization. Professional development in this study means the process that ensures a nonstop rise in knowledge, skills, and competencies required for effectively carrying out tasks and duties in terms of collaborative learning, effective communication, and life-long learning.

Participation in learning is said to be increased through the use of SNSs. Collaborative learning improves the attention of researchers to enhance their knowledge by learning to pursue the best method of solving problems toward the development of their profession. Communication is defined as sharing of ideas, views, attitudes, opinions, or messages that produce a level of agreement between two or more people (Omoik, 2010). This implies an attempt to construct significant requirements about what is happening around them through the exchange of information. Effective communication gives researchers a good opportunity of expressing their feeling and also serves as a medium for reducing tension and defining direction. Life-long learning is the activity embarked on throughout life for the development of competencies and qualifications (ILO, 2019). SNSs enhance learning and other activities

relating to personal and professional development.

1.2.6. The rationale for SNSs on Professional development of Lecturers

Academics today are in the global world where technology has become a trend for rising innovation in teaching, learning, and professional development as well as an increase in the visibility and phenomenon of lecturers' work (Lee et al., 2021). There is promising evidence that SNSs such as Google Scholar, ResearchGate Academia.edu, and the likes help lecturers to develop their social, intellectual, teaching method, collaborative learning, effective communication, problem-solving, and life-long learning as well as provide open access to ideas and publications. The reason for academic SNSs is to provide lecturers with different developmental practices that encourage their dignity and well-being, independence, and growth through collaborative learning, and effective communication.

1.3. Theoretical Framework

The theoretical contribution of this study is supported by Technology Acceptance Model developed by Davis (1986) as cited in Dumpit and Fernandez (2017). This model is based on the theory of reasoned action model which posits that the user's actual usage behavior is directly affected by behavioral intention which is influenced by two elements; Perceived Usefulness (PU) and Perceive Ease of Use (PEOU) (Ranellucci et al., 2020; Hoareau et al., 2021).

Figure 1. *Theoretical Framework*
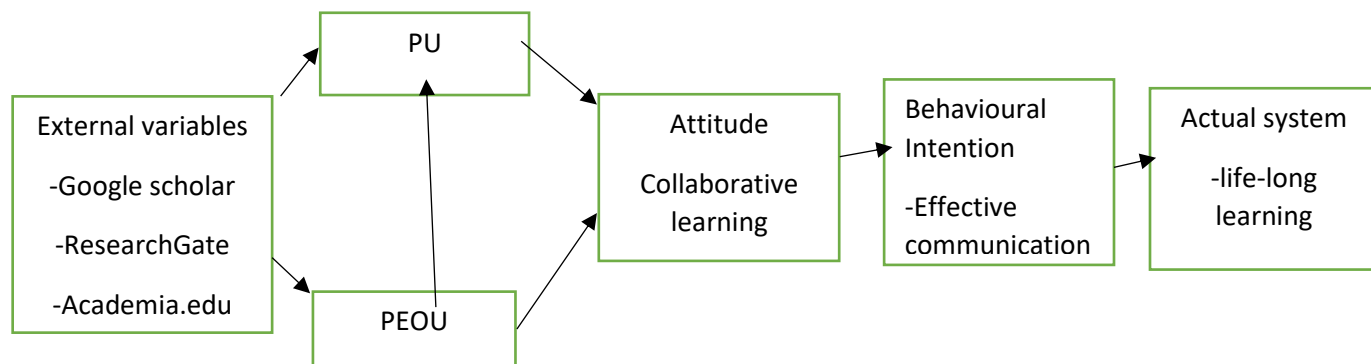
Source: adapted from Dumpit & Fernandez (2017).

Davis sees perceived usefulness as a way by which prospective users makes use of the social network to enhance their job performance. PEOU was seen as the level to which the prospective user expects their working system to be effortless. These two elements are influenced by external indices such as Google Scholar, ResearchGate, and Academia.edu which are mainly the impact of using technology for professional development.

This model can be applied in an education setting in that, assuming academics perceive SNS as useful and also easy to use, they will be willing to use them. Consequently, the more lecturers recognize that academic SNSs will make their tasks easier to perform and develop professionally, the higher the probability that they will use and accept it as being useful. The actual system use is the end-point (life-long learning) of using technology and behavioral intention (effective communication) which is the factor that leads lecturers to use the social network. Behavioral intention is influenced by the attitude (collaborative learning) which is the general impression of academic SNSs.

1.1. Purpose of study

Numerous areas on SNSs and academic life are yet to be covered by these Scholars. These areas include SNSs and professional development of lecturers especially in Kwara State, Nigeria. Furthermore, to the

researcher's knowledge, no research in Nigeria so far looked at collaborative learning, effective communication, and lifelong learning as critical variables to measure the professional development of lecturers in higher education. Thus, this study attempts to fill up the gaps left by the former Scholars. The objectives have been developed to:

a) Examine the relationship between Google Scholar and the professional development of lecturers.

b) Investigate the relationship between ResearchGate and the professional development of lecturers.

c) Determine the relationship between Academia.edu and the professional development of lecturers.

d) Investigate the relationship between Google Scholar, ResearchGate, and Academia.edu and the professional development of lecturers in Kwara State, Nigeria.

1.4. Research hypotheses

The following hypotheses were formulated and tested:

H1-There is no significant relationship between Google Scholar and the professional development of lecturers.

H2-There is no significant relationship between ResearchGate and the professional development of lecturers.

H3-There is no significant relationship between Academia.edu and the professional development of lecturers.

H4-There is no significant relationship between Google Scholar, ResearchGate, and Academia.edu and the professional development of lecturers in Kwara State, Nigeria.

2. Materials and Methods

2.1. Research design

The quantitative research design was adopted in this study because it provides an opportunity to describe the problem and phenomenon. It serves as a way to determine the interrelationship that exists between SNSs and the professional development of lecturers in higher institutions. Furthermore, a method of collecting information from a group that represents the entire population as events unfold as well as serves as a direct source of valuable knowledge concerning human behavior by describing the characteristics of a particular individual or group (Creswell & Creswell, 2017).

2.2. Participants

This study population comprised lectures from the three selected universities in Kwara State, Nigeria. The mark population for this study consists of 120 lecturers in the selected universities. Multi-stage sampling technique and a simple random sampling technique were used to select three universities (I federal university, I State university & I private university). The universities selected were the university of Ilorin, Kwara State University, and Al-Hikman university. To form clusters, these universities were further grouped. Each cluster consisted of four faculties, that is, faculty of education, the faculty of social science, the faculty of natural science, and the faculty of engineering. The researcher purposely selected the three universities primarily to maximize the feasibility of the study. 40 researchers (lecturers) at each institution were selected. Cluster random sampling technique was used to select lecturers from the sample universities to guarantee that all classes of lecturers were given the

opportunity of being chosen. Ethics approval was received from each university.

2.3. Data collection instrument

Self-constructed instruments titled "SNSs *and Professional Development Questionnaire" (SNSPDQ)* and adapted questionnaire were used in this study. A total of 17 items were used to measure SNSs with three sub-scales: Google Scholar (five items), ResearchGate (seven items), and Academia.edu (five Items). The items of the questionnaire pertaining management of professional development were concluded by Ong et al. (2019) on collaborative learning, effective communication, and life-long learning. It comprised 18 items with three components: Collaborative learning (six items), effective communication (six items), and life-long learning (six items). Respondents answered on a four-point Likert scale (4=Strongly Agreed; 3= Agreed; 2= Disagreed; and 1= Strongly Disagreed). The standard means are given thus: 4 + 3 + 2 +1/4 =2.50. The standard mean interprets that any item that is higher or equal to the criterion mean value of 2.50 is agreed while the item's lower standard mean value is disagreed by the respondents. This researcher made use of a four-point Likert scale because it is easier to answer and complete faster by the participant than 5 7 – a point scale as well as allows the use of four extreme options without the provision of the neutral option (Dolnicar & Grun, 2007).

2.3.1. Validity and reliability

Validity of the instrument was ensured by providing draft copies of the instruments to two experts in educational management and two experts in the test and measurement departments. Applicable corrections and changes were made based on their comments and observations. Likewise, 20 corrected copies were further distributed to lecturers who are part of the samples to detect their understanding of the instruction, wordings, and understandably of the questions and scales to observe if there is any problem that may develop in reacting to the questionnaire. Hence, some observations observed were done correctly before administering the concluding copies.

The reliability of the instruments was done with the use of Cronbach's alpha as appeared in Table 1, the value for Cronbach's alpha for this study was tested to be trustworthy.

Table 1. *Reliability test for SNSPDQ*

Construct	Sub-construct	N	Cronbach's Alpha	Decision
Social Network Site	Google Scholar	5	0.82	All items are trustworthy
	ResearchGate	7	0.84	All items are trustworthy
	Academi.edu	5	0.80	All items are trustworthy
Professional Development	Collaborative learning	6	0.86	All items are trustworthy
	Effective communication	6	0.84	All items are trustworthy
	Life-long learning	6	0.82	All items are trustworthy

Table 1 shows the results of the reliability test for SNSPDQ for SNSs construct, the Cronbach's Alpha values for the sub-construct are 0.82 for Google Scholar, 0.84 for ResearchGate, and 0.80 for Academia.edu. For the professional development construct, Cronbach's Alpha value for the sub-constructs is 0.86 for collaborative learning, 0.84 for effective communication, and 0.82 for life-long learning. Values above 0.70 are considered reliable and acceptable (Bond & Fox, 2015).

2.4. Data collection procedure

The information was gathered from the participants using a questionnaire. The questionnaire was administered to participants with the assistance of two trained research assistants. The participants were interacted with in their various offices to explain the objectives of the research and instructions before the distribution of the questionnaire to guarantee an optimal response rate. The data collection

process was swimmingly accomplished within 2 weeks since the questionnaire was administered in person and with the help of trained research assistants and colleagues in the three universities.

2.5. Data analysis

Descriptive and inferential analysis techniques were used to analyze the data collected. Descriptive statistics using simple percentages for demographic information, mean, and standard deviation were used to answer the research objectives which are designed at analyzing the perception of lecturers on SNSs based on three sub-constructs, namely, Google Scholar, ResearchGate, and Academia.edu., hypotheses were tested using Pearson product-moment correlation statistical and linear regression analysis.

3. Results

3.1. Demographic of participants

This part presents a comprehensive result analysis of data collected for this study. It started with the analysis of demographic data of respondents who responded using descriptive statistics.

Table 2. *The demographic of the participants*

		n=120	Percentage (%)
Gender:	Female	50	42%
	Male	70	58%
		120	100%
Age:	31-40	25	21%
	41-50	55	46%
	51 above	40	33%
		120	100%
Qualification	Master degree	30	25%
	Ph.D.	90	75%
		120	100%
Year of Experience	1-10 years	25	21%
	10-20 years	55	46%
	21 years Above	40	33%
		120	100%

Table 2 presents the demographic data of participants who participated in this study. From the table, 50 participants (42%) are female while 70 participants are male (58%). In terms of the average age of the respondents, the majority 55 of the participants (46%) are between ages 41–50 years. Based on the qualification of the respondents, the majority of 90 participants (75%) are Ph.D. holders. In the aspect of the year of experience, the majority of 55 participants (46%) have 10–20 years of experience, while 25 participants (21%) have 1–10 years of experience in the sample universities.

This part discusses the results of the findings based on research objectives.

3.2. Google scholar

Objective 1: Examine the relationship between Google Scholar and the professional development of lecturers.

Table 3 shows the mean and standard deviation of data collected on Google Scholar and the management of the professional development of lecturers.

Table 3. *Google scholar*

S/N	Google Scholar	Lecturers Responses Mean SD	Decision
1	Google Scholar arouses lecturers' interest in publication.	3.00 0.962	Agreed
2	Google Scholar provides an opportunity to learn with peers	2.90 1.009	Agreed
3	Google Scholar improves innovation in teaching.	2.90 1.037	Agreed
4	Google Scholar helps lecturers to view and identify prestigious and certified scientific journals.	2.89 1.002	Agreed
5	Google Scholar develops academic teaching performance.	2.78 0.856	Agreed
	Overall mean	2.90 0.973	

(Mean >2.50 Agree, mean <2.50 Disagree)

Table 3 shows the total perception of the lecturers on the impact of Google Scholar toward enhancing professional development is interpreted as "Agreed" (Mean = 2.90, SD = 0.973). This shows that the participants agreed that Google Scholar improves professional development in Kwara State, Nigeria. Furthermore, all the results acquire mean values higher than the criterion mean value of 2.50. This displays that the lecturers agree that Google Scholar (i) arouses lecturers' interest in publication (Mean = 3.00, SD = 0.962), (ii) provides an opportunity to learn with peers (Mean = 2.90, SD = 1.009), (iii) improves innovative in teaching (Mean = 2.90, SD = 1.037), (iv) help lecturers to view and identify prestigious and certified journals (Mean = 2.89, SD = 1.002), and (v) develops academic teaching performance (Mean = 2.78, SD = 0.856). The results indicate that the lecturers agree that when lecturers are adequately exposed to the use of Google Scholar, they will invariably be equipped with the necessary skills needed to improve their profession.

3.3. ResearchGate

Objective 2: Investigate the relationship between ResearchGate and the professional development of lecturers.

Table 4. *ResearchGate as Responded by Lecturers*

S/N	ResearchGate	Lecturer Responses Mean SD	Decision
6	ResearchGate enhances researchers' competence in research.	2.93 0.961	Agreed
7	ResearchGate increases the visibility and impact of lecturers' work.	2.98 0.921	Agreed
8	ResearchGate increases the self-esteem and well-being of lecturers.	2.94 0.965	Agreed
9	ResearchGate creates academic collaboration among lecturers.	2.89 1.014	Agreed
10	ResearchGate improves fundamental interaction with scholars around the world.	2.87 1.012	Agreed
11	ResearchGate improves life-long learning skills.	2.84 0.984	Agreed
12	ResearchGate improves effective communication	2.89 0.980	Agreed
	Overall mean	2.92 0.975	

Objective two is about ResearchGate as presented in Table 4, the overall view of the lecturers on the impact of ResearchGate in enhancing professional development is interpreted as "Agreed" (Mean = 2.92, SD = 0.975). This presents that the respondents concur that ResearchGate brings about professional development in Kwara State, Nigeria. Furthermore, all the results acquire mean values greater than the criterion mean value of 2.50. This shows that the lecturers agree that ResearchGate (i) enhances researchers' competence of research (Mean = 2.93, SD = 0.961), (ii) increases the visibility and impact of lecturers' work (Mean = 2.98, SD = 0.928), (iii) increases self-esteem and wellbeing of lecturers (Mean = 2.94, SD = 0.965), (iv) creates academic collaboration among lecturers (Mean = 2.89, SD = 1.014), (v) improves fundamental interaction with scholars around the world (Mean = 2.87, SD = 1.912), (vi) improves life-long learning skills (Mean = 2.84, SD = 0.984), and (vii) improve effective communication (Mean = 2.87, SD = 1.912). The results show that the lecturers agree that it is important to make use of ResearchGate to strive more in preparing and delivering a better quality of research.

3.4. Academia.edu

Objective 3: Determine the relationship between Academia.edu and the professional development of lecturers.

Table 5 shows the mean and standard deviation of data gathered on Academia.edu and the professional development of lecturers.

Table 5. *Academia.edu*

S/N	Academia.edu	Lecturers Responses Mean SD	Decision
13	Academia.edu helps scholars to have up-to-date information about colleagues' publications.	2.87 0.980	Agreed
14	Academia.edu provides open access to researchers' ideas and publications.	2.81 1.033	Agreed
15	Academia.edu improve the horning of research skills.	2.84 0.984	Agreed
16	Academia.edu builds concrete connections with other academics both national and international.	2.81 0.965	Agreed
17	Academia.edu helps to build academic professional networking with other researchers as well as facilitate activities while conducting research.	2.98 0.226	Agreed
	Overall mean	2.86 0.838	

(Mean ≥ 2.50 Agree, mean < 2.50 Disagree)

As shown in Table 3, the overall perception of the lecturers on the impact of Academia.edu toward enhancing professional development is interpreted as "Agreed" (Mean = 2.90, SD = 0.973). This reveals that the participants agree that Academia.edu enhance professional development in Kwara State, Nigeria. Furthermore, all the responses obtained mean values higher than the criterion mean value of 2.50. This shows that the lecturers agree that Academia.edu (i) helps for keeping up-to-date with colleagues' publications (Mean = 2.87, SD = 0.980), (ii) provides open access to researchers' ideas and publications (Mean = 2.81, SD = 1.033), (iii) improves horning of research skills (Mean = 2.84, SD = 0.984), (iv) builds concrete connections with other academics both national and international (Mean = 2.81, SD = 0.965), and v) helps to build academic professional networking with other researchers as well as facilitate activities while conducting research (Mean = 2.98, SD = 0.226). The results show that the lecturers agree that when lecturers are adequately exposed to the use of Academia.edu, they will

ensure and keep a favorable setting for improving learning and total development.

3.5. Hypotheses testing

Pearson product-moment correlation statistics were used to analyze the relationship between independent and dependent variables.

H_1:   There is no significant relationship between Google Scholar and the professional development of lecturers.

Table 6. *Correlational Analysis for Google Scholar and Professional Development*

		Google Scholar	Professional Development
Google Scholar	Pearson correlation	1	0.78**
	Sig. (2-tailed)		0.000
	N	120	120
Professional Development	Pearson Correlation	0.78**	1
	Sig. 2-tailed)	0.000	
	N	120	120

Table 6 shows that Google Scholar has a positive and significant relationship with the professional development of lecturers with calculated R-value = 0.78; $p < 0.000$. This presents that there is a positive and significant relationship between Google Scholar and the professional development of lecturers in Kwara State Universities. Therefore, the hypothesis stating that there is no significant relationship between Google Scholar and the professional development of lecturers is rejected (Miller et al, 2013).

H_2:   There is no significant relationship between ResearchGate and the professional development of lecturers.

Table 7. *Correlational Analysis for ResearchGate and Professional Development*

		ResearchGate	Professional Development
ResearchGate	Pearson Correlation	1	0,82**
	Sig. (2-tailed)		0.000
	N	120	120
Professional Development	Pearson Correlation	0.82**	1
	Sig. (2-tailed)	0.000	
	N	120	120

Table 7 shows that ResearchGate has a positive and significant correlation with the professional development of lecturers with a calculated R-value = 0.82; $p < 0.000$. This shows that there is a positive and significant relationship between ResearchGate and the professional development of lecturers in Kwara State. Therefore, the hypothesis stating that there is no significant relationship between ResearchGate and the professional development of lecturers is rejected (Neuman, 2013).

H_3:   There is no significant relationship between Academia.edu and the professional development of lecturers

Table 8. *Correlational Analysis for Academia.edu and Professional Development*

		Academia.edu	Professional Development
Academia.edu	Pearson Correlation	1	0.80**
	Sig. (2-tailed)		0.000
	N	120	120
Professional Development	Pearson Correlation	0.80**	1

Sig. (2-tailed)		0.000	
N		120	120

Table 8 presents that academia.edu has a positive relationship with the professional development of lecturers with a calculated R-value = 0.80; p < 0.000. This presents that there is a positive correlation between academia.edu and the professional development of lecturers in Kwara State. Thus, the hypothesis stating that there is no significant relationship between academia.edu and the professional development of lecturers is rejected (Timmermans & Tavory, 2012).

H₄: There is no significant relationship between Google Scholar, ResearchGate, and Academia.edu and the professional development of lecturers in Kwara State, Nigeria.

3.6. Linear regression analysis

This segment explains the linear regression finding that measures SNS variables on the professional development of lecturers in Kwara State, Nigeria.

Table 9. *Linear Regression of Social Network and Professional Development*

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate
1	0.520	0.607	0.504	0.412

A. Predictors: (constant), Google Scholar, ResearchGate, Academia.edu

Table 9 shows the value of SNSs on the professional development of lecturers. It presents that the R Square value that SNSs have an impact on the professional development of lecturers with 0.607 by staff the R square value from the table. Therefore, the result showed that SNSs can enhance the professional development of lecturers.

Table 10. *Linear Regression Coefficients for Social Network Sites and Professional Development*

Modell	Unstandardized coefficient		Standardized coefficient	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.457	0.373		6.291	0.000
Interpersonal relationship	0.137	0.214	0.294	1.577	0.038
Effective communication	0.042	0.224	0.196	1.608	0.012
Participatory decision-making	0.082	0.177	0.243	2.146	0.215

a. Dependent Variable: Professional Development

Table 10 indicated the results of running a linear regression model that the standard regression weight of the beta-coefficient value for SNSs was 1.020 which indicated that the increase in the use of SNSs by lecturers is responsible for the increase in their professional development. Furthermore, it showed that SNSs and the professional development of lecturers were positively correlated. The T-test of 6.291 was significantly high with a corresponding p-value of 0.000. Thus, in comparison, the interpersonal relationship has the highest effect (Beta=0.294) followed by participatory decision-making (Beta=0.243) and effective communication (Beta=0.196). In summary, there is a significant and positive correlation between interpersonal relationships, effective communication, participation in decision-making, and community engagement.

4. Discussion

The result of objective one in Table 3 reveals that Google Scholar improves the efficient professional development of lecturers in Kwara State, such that it arouses lecturers' interest in publications, provides an opportunity to learn with peers, improves innovation in teaching, helps lecturers to view and identify prestigious and certified journals as well as develops academic teaching performance. Results from hypothesis one showed that there is a positive and significant relationship between Google Scholar and the professional development of lecturers in Kwara State. This finding agreed with Kelly and Dalasalle (2012) that Google Scholar, Academia, and ResearchGate can help increase the visibility of researchers and their publications. This finding conforms with Jeng et al (2012) that Academic SNSs serve as a virtual collection for the effective development of Scholars.

The findings in Table 4 show that ResearchGate enhances the effective professional development of lecturers in Kwara State, such that it increases the visibility and impact of lecturers' work, enhances researchers' competence of research, increases self-esteem and well-being of lecturers, creates academic collaboration among lecturers, improves fundamental interaction with scholars around the world, and improves life-long learning as well as enhances effective communication. Hypothesis two results showed that there is a significant and positive correlation between ResearchGate and the professional development of lecturers in Kwara State, Nigeria. This finding is in line with Nicholas et al., (2015) that ResearchGate has progressively become the most popular social networking service developed specifically to support academic and research practices. This finding also concurs with the findings of (Nilufer, 2016; Noorul and Masitah, 2015; Dewiyati et al, 2007) that SNSs' collaborative learning influence lecturers' positive experience and professional development.

The findings in Table 5 showed that Academia.edu improves the professional development of lecturers in Kwara State. These are: It helps keep up-to-date information of colleagues' publications, improves horning of research skills, and builds academic professional networking with other researchers as well as facilitates activities while conducting research. Results from hypothesis three disclosed that there is an optimistic and important correlation between Academi.edu and the professional development of lecturers in Kwara State, Nigeria. This finding agreed with Miguez-Gonzalez et al. (2017) that Academia.edu fosters collaboration and manages the reputation of researchers and institutions. These findings also concur with Kelly and Delasalle (2012) that Academia.edu, Google scholar, and ResearchGate can help increase the visibility of researchers and their publications.

The finding of regression analysis revealed that there is a positive relationship between SNSs and the Professional development of lecturers. This is an indication that Google Scholar, ResearchGate, and Academia.edu have a positive chance of improving the professional development of lecturers. The findings conform to (Kitchin, 2014; Veletsianos, 2013; Graham, 2013; Lofgren, 2014) that social networks may transform the nature of academic writing, Scholarship, and identity. This finding also agreed with Mestry et al. (2009) that the professional development of teachers is paramount in creating an effective school.

5. Conclusion

The findings of this study will benefit all academic leaders, lecturers, government, and stakeholders in education. Furthermore, it will help academic leaders to effectively encourage lecturers to make use of academic SNSs appropriately toward the development of their profession. The findings of this study will also help lecturers to make positive use of SNSs to develop professionally. Furthermore, this study will

encourage the government and stakeholders to continue to provide incentives for academic staff to effectively make use of SNSs for the development of their profession.

This study examines the impact of SNS, such as Google Scholar, ResearchGate, and Academia.edu on the professional development of lecturers. The findings revealed that the lecturers agreed that academic SNSs enhance and improve collaborative learning, effective communication, and life-long learning which are indicators of the professional development of lecturers. This study has several limitations. Therefore, the future researchers can extend this study by using another variable as an indicator of SNSs aside from the variables used in this study. This study can also be conducted in other higher institutions and use different statistical analyses.

6. Recommendations

Lecturers should continue to make use of Google Scholar to arouse interest in publication, provide an opportunity to learn with peers, improve innovation in teaching, view and identify prestigious, and certified journals as well as develop academic teaching performance. Furthermore, lecturers should improve on the use of ResearchGate to increase the visibility and impact of their works and competence of research, increase self-esteem and well-being, create academic collaboration with others, improve fundamental interaction with colleagues around the world, and improve life-long learning as well as enhance effective communication. Furthermore, lecturers should continue to register with Academia.edu for having updated information with colleagues' publications, improve the horning of research skills, and build academic professional networking with other researchers as well as facilitate activities while conducting research.

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