Academic social networking tools usage among Nigerian University academics

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ABSTRACT

There is limited information on use of social media tools in teaching and research among academics in low-and-middle income countries. This study aimed to assess awareness and use of Academic Social Network Tools (ASNTs) among Nigerian academics. A cross-sectional survey of 100 randomly sampled Nigerian academics was carried out. A two-section structured questionnaire which sought information on demographic profile, familiarity and use of ASNTs, and perceptions on usefulness and barriers to integrating ASNTs was used for data collection. Most of the respondents were aware of ResearchGate (97%), Academia.edu (96%), Facebook (94%) and Twitter (94%) as ASNT. The most visited ASNT were Facebook (36%) and Twitter (28%). ASNT were used for sharing of research content to other academics (32%) and for making research profile highly visible globally (24%). Most respondents (76%) perceived ASNT as highly beneficial, but busy work schedules (12%) and problematic internet connections (12%) mostly inhibit their usage. Less than 50% of the academics had moderate to high levels of awareness and use of ASNT, and junior rank and younger academics had significantly higher ASNT awareness and utilization rates. There was significant association between use of ASNT and academic ranks, but none with age, sex and

educational level. Nigerian academics utilized ASNTs, especially ResearchGate to share research content to other academics, make academic research profile highly visible globally. These academics have positive perception about ASNTs but it has bias towards their academic ranks.

KEYWORDS
Social Networking Tools, Universities, Nigeria

RÉSUMÉ
Il existe peu d'informations sur l'utilisation des outils des médias sociaux dans l'enseignement et la recherche parmi les universitaires des pays à revenu faible et intermédiaire. Cette étude visait à évaluer la sensibilisation et l'utilisation des outils de réseaux sociaux universitaires (ASNT) parmi les universitaires nigérians. Une enquête transversale a été menée auprès de 100 universitaires nigérians choisis au hasard. Un questionnaire structuré en deux sections visant à obtenir de l'information sur le profil démographique, la familiarité et l'utilisation des ASNT, ainsi que les perceptions sur l'utilité et les obstacles à l'intégration des ASNT a été utilisé pour la collecte de données. La plupart des répondants connaissaient ResearchGate (97%), Academia.edu (96%), Facebook (94%) et Twitter (94%) en tant qu'ASNT. Les ASNT les plus visités ont été Facebook (36%) et Twitter (28%). Les ASNT ont été utilisés pour partager le contenu de la recherche avec d'autres universitaires (32 %) et pour rendre le profil de recherche très visible à l'échelle mondiale (24%). La plupart des répondants (76%) perçoivent l'ASNT comme très bénéfique, mais les horaires de travail chargés (12%) et les connexions Internet problématiques (12%) inhibent principalement leur utilisation. Moins de 50 % des universitaires avaient des niveaux modérés à élevés de sensibilisation et d'utilisation de l'ASNT, et les universitaires de rang inférieur et plus jeune avaient des taux de sensibilisation et d'utilisation de l'ASNT significativement plus élevés. Il y avait une association significative entre l'utilisation de l'ASNT et les rangs académiques, mais aucune avec l'âge, le sexe et le niveau de scolarité. Les universitaires nigérians ont utilisé les ASNT, en particulier ResearchGate, pour partager le contenu de la recherche avec d'autres universitaires, ce qui rend le profil de la recherche universitaire très visible à l'échelle mondiale. Ces universitaires ont une perception positive des ASNT, mais il y a un biais en faveur de leurs rangs universitaires.

MOTS CLÉS
Outils de réseautage social, Universités, Nigeria

INTRODUCTION

Social network provides learners with value resources for using the web as a tool in order to develop their understanding and solve problems, whether in school, at work, or in private lives (Ansari & Hasan, 2015). Further, Bishop (2007) asserts that online social networks are platforms for bringing together people who share common interests. Thus, the arrival of social media has changed the status of web consumers from inactive users of information to active co-creators of social content (Li & Gillet, 2013). Social media are networked tools that support and encourage individuals to learn together while retaining individual control over their time, space, presence, activity, identity and relationship (Anderson, 2005). Use of social media is notably extensive amongst young generation, especially for social interactions (Anderson, 2005); however, it is becoming progressively used in educational circles to facilitate knowledge exchange and research movement (Anderson, 2005). As a result, an

increasing number of academic social media websites like Mendeley and Academia.edu have evolved, which have facilitated researchers worldwide to shape professional contacts, disseminate research resources, and promote scientific collaboration (Cutler, 2012). In view of the foregoing, Ovadia (2014) posits that academic social networks are specific in nature as they facilitate academic-related activities, permit users to share their publications and datasets, and post comments/questions/answers to the scientific community.

It is noteworthy that students, often described as digital natives, are more versatile in the use of social network tools than lecturers and are deploying various social media tools for social and academic purposes (Roblyer et al., 2010). Lecturers not only need to be aware of these digital innovations but should adopt them in order to be on the same playing field as their students in order to meet the 21st century needs, and to encourage knowledge exchange in their respective fields (Sheikh, 2017). Further, Gruzd et al. (2012) describe that more and more scholars are joining academic social networking websites day by day, in order to facilitate their research activities, make new connections with peers, enable collaboration, and showcase their research. Each academic social network offers its own combination of tools and capabilities to support research activities, communication, collaboration, and networking (Bullinger et al., 2012; Espinoza et al., 2015).

To effectively adopt this social network tools into the traditional academic system, institutions are expected to modularize their activities into such applications/platforms as a way of integration (Manca & Ranieri, 2017). Presently, there is research dynamism in the university settings (Dimitriadou et el., 2020), thus, the academic and learning environment should not be left out; rather a high level of adoption is expected by the very educated people who should champion digital learning, teaching and research (Manca & Ranieri, 2017). However, the use of Academic Social Network Tools (ASNTs) by lecturers in Nigerian universities is still budding (Camilia et al., 2013). Based on anecdotes, many lecturers in Nigerian universities are still not competent on the use ASNTs as a teaching tool. This affects the overall set academic objectives and impairs the goal of any existing or new e-learning system (Dalsgaard, 2008). Meanwhile, ASNTs have become inevitable to produce marketable and employable graduates (Berg et al., 2007). Berg et al. (2007) posit that employability enhancement and career management among a diverse range of core university processes can be facilitated through the application of social networks. There is limited evidence on the extent of integration of social media tools in teaching and research among academics in low-and-middle income countries. This study was aimed to assess awareness and use of ASNTs among Nigerian academics.

REVIEW OF LITERATURE

With the advanced Web 2.0, many Social Networking Sites (SNSs) such as Facebook, Twitter, Orkut and others were introduced and became widely used by general public internet users (Nentwich, 2010). Indeed, since the emergence of SNSs in 1997, there has been a marked increase in the number of users, culminating in a total of 1.79 billion users worldwide in 2014, and an estimate of 4.89 billion users around the globe in 2023 (Statista, 2023). These SNSs allow users to create a personal profile and make personal connections with other users (Boyd & Ellison, 2007).

Academic Social Networking tools (ASNTs) is another branch of online SNSs. These platforms offer the users a freedom for creation of content and offer open spaces to collaborate, agree, debate, discuss different ideas, and creation and sharing of content and knowledge (Jordan, 2019; Jordan & Weller, 2018). As the scope of ASNTs is limited to the academic community, they appeal greatly to academics, and the number of members of these

online academic social networks is constantly rising. These sites improve collaborative scientific activity and increase the ability to publicize research output (Thelwall & Kousha, 2014a). For example, ASNTs like ResearchGate, Academia.edu and Mendeleyattract millionsof researchers (Jordan, 2014, 2019 Jordan & Weller, 2018). In reports, Mangan (2012), Thelwall and Kousha (2014b), and Yu et al. (2016) found that ASNTs like Academia.edu, ResearchGate, Mendeley and Zotero have millions of users. Even, some of the non-popular sites such as Mynetresearch.com, Lameresearch.com, Academic.com and Lallslo.com have approximately 500,000 users for each (Jordan, 2014). Almousa (2011) submits that academic communities of diverse categories and of different fields are adopting ASNTs. Ward et al. (2015) posit that the growing recognition of collaborative and citation management applications, and new metrics to track scholarly impact are important drivers of adoption of these ASNTs.

In recent times, the ASNTs have become a part of most scholars' scientific lives. However, Weintraub (2012) report that the pattern of use of these ASNTs have been less explored compared to research on the benefits. Among several literatures relating to benefits of ASNTs, Meishar-Tal and Pieterse (2017) found these sites to be valuable in "self-promotion and ego-bolstering, acquisition of professional knowledge, belonging to a peer community, and interaction with peers". Furthermore, a scoping review of 115 previous literatures on the usefulness of ASNTs found four main themes relating to motivation and uses, impact assessment, features and services, and scholarly big data (Hailu & Wu, 2021). With respect to pattern of use of ASNTs, a review of 40 articles published during the 2001 to 2020 indicates that socio-cultural differences and existence of disciplinary variations influence the choice of ASNTs platforms as well as frequency of use of a particular platform by users belonging to a particular discipline (Majumdar, 2022). In the Nigerian context, studies on use of ASNTs is skewed towards students population (Adedokun-Shittu & Tolorunleke, 2022; Apuke & Iyendo, 2017; Asogwa et al., 2015; Eke et al., 2014; Ekwueme et al, 2018) than among academics (Olanusi & Olanusi, 2022; Mbada et al., 2023), with the exception of library staff (Adewojo & Mayowa-Adebara, 2016; Akwang, 2022; Tella et al., 2013), hence the need for this current study.

MATERIAL AND METHODS

A cross-sectional survey of consenting academics at the Obafemi Awolowo University (OAU), Ile-Ife, Nigeria was carried. OAU, a federal government-owned university that is located in the ancient city of Ile-Ife, Osun State, is the Nigeria's leading ICT University with a campus-wide network consisting of a fibre optic backbone, 23 intra-networked subnets and wireless access clouds (WiFi) distributed across the site. The University has thirteen faculties and 85 academic departments. Based on sampling frame of 1350 academics at the institution, sample size was calculated using the formula by Yamane (1967), $n = \frac{N}{1+N*(e)^2}$ where: n is the sample size; N is the population size; 1 is constant and e is the level of precision. Thus - $n = \frac{1350}{1+1350*(0.10)^2} = 93$. In all, a total sample of 100 lecturers were drawn using a stratified random sampling process. Six out of the thirteen faculties of the institution (Administration, Agriculture, Art, Basic Medical Sciences, Science and Social Sciences) were randomly selected. Thereafter, three departments from each of the selected faculties were randomly chosen. Then six consenting academics were drawn purposively from each of the selected departments (1 professors/associate professors, 2 senior lecturers, and 3 lecturers/assistant lecturers).

A structured questionnaire adapted from previous related studies (El-Berry, 2015; Sheik, 2017), and tested for face and content validity among lecturers (n=30) who were not part of the main study was used in this study. The two-section questionnaire sought to obtain information on demographic profile, familiarity and use of ASNTs, and perceptions on usefulness and barriers to integrating ASNTs. Ethics approval for this study was obtained from the Health and Research Committee of the Obafemi Awolowo University, Ile-Ife, Nigeria (IPH/OAU/12/1750).

Data Analysis

Descriptive statistics of mean and standard deviation, and percentages were used to summarize data. Inferential statistics of chi-square was used to determine the relationship between the demographic profile and ASNTs data. The data analyses was carried out using SPSS 16.0 version software (SPSS Inc., Chicago, Illinois, USA). Alpha level was set at $p < 0.05$.

RESULTS

From the results, most of the respondents were males (71%), within the 30-39 years age group (49%) and had an MSc degree (54%). More academics in the Lecturer II (25%) and Lecturer I (33%) grades participated in the study (Table 1). Research Gate (97%), Academia.edu (96%), Facebook (94%), Twitter (94%), Mendley (93%) and Google + (93%) were the most commonly known ASNTs. On the other hand, Zotero (17%), myExperiment (17%), CiteULike (15%), SciSpace (15%), and Myscience.ch (12%) were mostly unknown (Table 2). The rates of the level of awareness of ASNTs classified as low, moderate and high were 22%, 43% and 35% respectively.

Facebook (36%), Twitter (28%), Google + (23%), Academia.edu (18%), Research Gate (17%) and Google Scholar (17%) were the top 'always visited' ASNT sites. Conversely, Zotero (2%), Academic.com (1%) and Pubchase (1%) were the least 'always visited' sites (Table 2). The computed mean ranked for the score ranks on use of ASNTs show that Facebook (mean ranked=2.19), Research Gate (mean ranked = 1.68), Mendeley (mean ranked = 1.49), Academia.edu (mean ranked=1.47) and Google + (mean ranked=1.44) were the top six most visited sites by the respondents (Table 2). Figure 2 shows that ASNTs were poorly utilized by a majority (58%) of respondents. The rates of usage of ASNTs as low, moderate and high were 58%, 29% and 13% respectively.

The Table 3 shows results on importance/purposes/reasons for use of ASNTs. ASNTs was frequently used for sharing research content to other academics (32%) and for making academic research profile highly visible globally (24%), however making research visible to possible future employers in Nigeria (4%) account for the least use. ASNTs was mostly used by academics for posting content related to their work (99%), viewing other researchers' academic/professional profile (53%) and for making their academic/research profile highly visible to Nigerian academics/researchers (41%), however, it was least used for town-gown engagement (10%) (Table 3). Furthermore, ASNTs were employed more frequently to reach peers outside their research fields (28%) and to share link to authored content (e.g. research papers, datasets) (20%), while commenting on research related to respondents' fields was the least reason for its utilization (Table 3).

Perceived benefit of ASNTs was determined by coding the Likert scale on a scale of "0-4" so that respondents that never thought or perceived any of the benefits be graded on a score of zero in that order. The total score obtainable was 124 and interquartile percent (25%, 50% and 75%) was used to grade perception of benefits of academic social network tool/sites

into low, fair and high respectively. The rates on perceived benefit of ASNTs classified as low, fair and high were 5%, 19% and 76%.

Too busy schedule (12%) and poor maintenance of damaged internet connection facilities (12%) were the most reported barriers to utilization of ASNTs. On attitudinal factors that may impede use of ASNTS, perception of one as a new user who needs to learn more on how to use the tools/sites (15%) and the notion that nothing much has been derived from the previous usage of the tools/sites (6%) were the most highest and least rated options. Use of social media tools/site requiring too much effort (19%) and well as demanding too much internet connection data (4%) were the highest and the least rated effort expectancy factor that constrain the use of ASNTs. Social influence facilitating use of ASNTs includes its increasing widespread use by peers (10%) and by junior academics (9%). However, increase use of ASNTs was not because university management encouraged its use (20%) (Table 4). The total means score for each of the facilitating conditions; attitude, effort expectancy and social influence are 2.47±1.25, 2.24±0.99, 1.93±1.18 and 1.95±1.55 respectively. From the scores, facilitating conditions served as the least barrier to respondents' use of ASNTs followed by their attitude, social influence and effort expectancy (figure 1).

Results on future intention to use or continue the use of ASNTs is presented in Table 5. Most of the respondents will continue future use of ASNTs because they feel it help in gaining global recognition (82%) and also aids specialization in field (88%). Almost all the respondents (90%) agreed that ASNTs will help in gaining professional visibility, and to meet more academic people in future (85%). 81% of the respondents agreed that ASNTs will help in keeping up with user's research domain and connect with people who have similar research interests (91%). Table 6 showed the association between usage of ASNTs and socio-demographic variables of age, gender, level of education and academic position. There was a significant relationship between usage of ASNTs and gender ($p<0.05$) and academic position ($p<0.05$). There was no association between each of age, education level and usage of ASNTs ($p<0.05$) (Table 6).

TABLE 1
Demographic profile of the respondents (N=100)

Attribute		Frequency	Percentage
Gender			
	Male	71	71.0
	Female	29	29.0
Age range (years)			
	20-29	14	14.0
	30-39	49	49.0
	40-49	28	28.0
	50 and older	09	9.0
Educational level			
	BA/BSc	15	15.0
	MA/Med/MSc	54	54.0
	PhD	31	31.0
Academic position			
	Graduate assistant	11	11.0
	Lecturer II	25	25.0

	Lecturer I	33	33.0
	Senior Lecturer	18	18.0
	Associate prof	08	8.0
	Professor	05	5.0

TABLE 2

Awareness and frequency of use of academic social network tools/sites (N=100)

Academic Social Network Tool/Site	Awareness of ASNTs		Frequency of use of ASNTs			
	Aware	Not aware	Always visited	Often visited	Occasionally visited	Never visited
	%	%	%	%	%	%
Research Gate	97	3	36	52	7	5
Academia.edu	96	4	28	28	25	19
Facebook	94	6	23	17	41	19
Twitter	94	6	18	30	33	19
Mendeley	93	7	17	37	43	3
Google+	90	10	17	7	14	61
LinkedIn	80	20	14	30	47	9
Google Scholar	53	47	8	12	25	54
Academic.com	41	59	8	10	24	58
MLA Commons	40	60	7	1	15	75
Researcher ID	40	60	7	5	21	65
BioMed Experts	37	63	6	8	15	70
MyNetresearch.com	35	65	6	30	39	25
Scholarstical	35	65	6	2	34	57
ORCID	35	65	5	9	11	75
Lameresearch.com	32	68	5	17	12	63
Frontiers	29	61	4	17	20	59
Microsoft Academic	27	73	4	5	4	84
Pubchase	24	76	3	11	22	64
Quartzy	20	80	3	1	8	85
Lallslo.com	18	82	3	9	18	63
Zotero	17	83	3	6	5	86
myExperiment	17	83	3	5	17	73
CiteULike	15	85	2	2	2	90
SciSpace	15	85	1	18	6	75
Myscience.ch	12	88	1	6	25	66

TABLE 3

Reasons/purposes for using academic social network tools/sites (N=100)

	Always	Very often	Moderately often	Not often	Never
	%	%	%	%	%
Purpose/Reason for using ASNTs					
Sharing your research content to other academics	32	21	18	17	9
Making your academic research profile highly visible globally	24	36	26	10	4

Obtaining free access to research by other academics/researcher	18	47	26	8	1
Attracting research collaborators from abroad	18	27	27	12	16
Attracting research collaborators in the country	12	27	14	46	1
Making your research visible to funding bodies	10	34	24	9	23
Making your research visible to possible future employers outside the country	8	41	26	20	5
Raising the profile of your work in the research community	7	24	23	25	21
Raising your personal profile in the research community	6	11	16	23	44
Making your research visible to possible future employers in the country	4	34	16	31	15
Research Visibility Related Reasons/purposes for using ASNTs					
Posting content related to your work	99	18	19	8	29
Viewing other Nigerian researchers' academic/professional profile	53	35	5	3	4
Making your academic/research profile highly visible to Nigerian academics/researchers	41	31	23	3	2
Viewing academic/professional profile of researchers outside Nigeria	41	25	16	10	8
Making your teaching skills and practices visible to other teachers in Nigeria	30	19	9	19	23
Keeping informed in what other academics are using the tools/sites to do worldwide	28	32	19	19	1
Just out of curiosity about what the site/tool is about	28	16	8	40	10
Keeping a profile just in case someone wishes to contact me about my research	26	26	11	21	16
Making your teaching skills and practices visible to other teachers abroad	20	12	13	22	33
Making your gown-to-town initiatives and projects visible to other academics abroad	19	27	14	16	24
Making your gown-to-town initiatives and projects visible to other academics in Nigeria	10	20	25	37	8
Perceived Benefits of Reasons/Purpose for using					

ASNTs					
Discovering individuals outside of my field of research	28	34	22	6	10
Sharing link to my authored content (e.g. research papers, datasets)	20	60	8	2	10
Contacting peers in my field of research	18	53	15	6	8
To track metrics relating to interest in my work	17	39	10	5	29
Discovering job opportunities	16	40	12	20	12
Discovering recommended research papers	16	35	19	21	9
Discovering peers in my field of research	15	37	31	7	10
Actively engage in discussing the research of others	13	36	21	10	17
Actively engage in discussing my research	12	5	48	20	15
Commenting briefly on research related to my field	9	26	19	42	4

TABLE 4

Facilitators or constraints to the use of academic social network tool/sites (N=100)

Enablers or Obstacles	**SA**	**MA**	**N**	**MD**	**D**
Facilitating conditions	%	%	%	%	%
Usually too busy to afford time using academic social network tools/sites	12	11	5	47	25
Poor maintenance of damaged internet connection facilities	12	23	11	30	24
Unavailability of ready/fast Internet connectivity on campus	7	17	9	25	42
Unreliable electricity supply and high cost of alternatives	3	18	25	29	25
Attitude					
Am new to using academic social network tools/site so need to learn more about how to use them	15	19	14	12	40
Not really enthusiastic about using social media tools/sites	11	32	13	20	24
Lack of support/encouragement from trusted authorities	7	23	9	30	31
Have not derived much value from my previous usage of the tools/sites	6	9	18	20	47
Effort expectancy					
Use of social media tools/site requires too much effort.	19	10	28	25	18
I don't have enough understanding of available functions on academic social media tools/sites	12	17	8	40	23
Use of social media tools/site takes too much time	7	43	12	18	20

|				
Use of social media tools/site demands too much internet connection data	4	31	16	22	27
Social influence					
Becase of its increasing use by academics at my level	10	23	23	20	24
Because of its increasing use by academics junior to me	9	24	26	16	25
Because of it is being gently demanded by the university management	9	27	28	17	19
Because of its increasing use by academics at senior to me	8	33	3	12	44
Because of it is being strongly/ forcibly demanded by the university management	5	10	18	24	43
Because it is being encouraged by the university management	1	36	23	20	20

Key: SA = strongly agree, MA= moderately agree, N= neutral, MD= moderately disagree, D= disagree

FIGURE 1
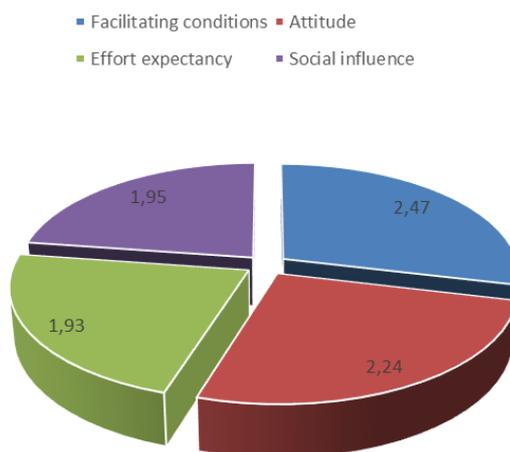
Perceived facilitators and constraints to the use of academic social network tool/sites

FIGURE 2
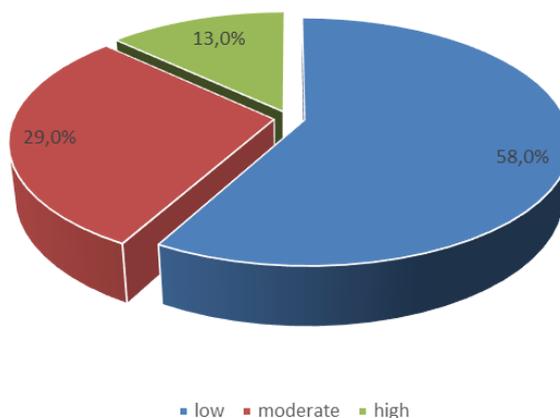
Pictorial representation of level of utilization of ASNTs

TABLE 5
Respondents' future intention to use or continue the use of academic social network tool/sites
(N=100)

Future intention of using Academic Social Networking Tool	Strongly agree	Somewhat agree	Neutral	Somewhat disagree	Strongly disagree
	%	%	%	%	%
Gaining global recognition	42	40	4	4	10
Specialization in field	49	39		11	1
Gaining professional visibility	50	40	3	4	3
Expand current social network	53	46			1
Meet more academic people	53	32	2	5	8
Keep up with a user's research domain	31	50	4	1	14
Follow topics that community is paying attention to	68	26	4		2
Keep in touch with people one already knows	62	20	6	7	5
Get research-related questions answered	59	19	4	5	13
Connect with people who have similar research interests	67	24	--	4	5
Contribute to the reading list	49	19	7	8	17
Participation in trending discussions	56	22	9	6	7

TABLE 6
Relationship between demographic variables and usage of academic social network tool/sites
(N=100)

Variable		Usage			χ^2	p-value
		Low	Moderate	High		
		n (%)	n (%)	n (%)		
Age (Years)	20-29	11(11.0)	3(3.0)	---	6.961	0.32
	30-39	30(30.0)	12(12.0)	6(6.0)		
	40-49	13(13.0)	9(9.0)	5(5.0)		
	50 above	4(4.0)	5(5.0)	2(2.0)		
Sex	Male	42(42.0)	23(23.0)	6(6.0)	4.927	0.08
	Female	16(16.0)	6(6.0)	7(7.0)		
Educational Level	BA/BSc	12(12.0)	3(3.0)	---	6.551	0.16
	MA/Med/MSc	31(31.0)	15(15.0)	6(6.0)		
	PhD	15(15.0)	11(11.0)	7(7.0)		
Academic position	Graduate assistant	10(10.0)	1(1.0)	---	19.315	0.03
	Lecturer II	18(18.0)	5(5.0)	2(2.0)		
	Lecturer I	18(18.0)	10(10.0)	5(5.0)		
	Senior lecturer	9(9.0)	8(8.0)	1(1.0)		
	Associate professor	2(2.0)	3(3.0)	3(3.0)		
	Professor	1(1.0)	2(2.0)	2(2.0)		

DISCUSSION

There is an explosion in the use of social networking sites among the general public, especially in the academics (Hailu & Wu, 2021; Meishar-Tal & Pieterse, 2017). The importance of these sites to the academics has been outlined (Almousa, 2011; Boyd & Ellison, 2007; Thelwall & Kousha, 2014a). However, data on the integration of ASNTs among academics from low-and-middle income countries, including Nigeria is sparse (Mbada et al., 2023). This study assessed the awareness and use of ASNTs among Nigerian academics. From the findings of this study, Nigerian University academics had moderate to high level of awareness of ASNTs. Accordingly, ResearchGate, Academia.edu, Facebook, Twitter, Mendley and Google + were the commonly known ASNTs. The most famous ASNTs according to this study was ResearchGate. These findings are similar to earlier reports that pointed out that ResearchGate was the most famous social media network among scholars (El-Berry, 2015).

Further findings indicate that Facebook, ResearchGate, Mendeley, Academia.edu and Google + in that order were the top 'most visited' ASNTs. Previously, empirical data has shown that there are millions of academics using Academia.edu, ResearchGate, Mendeley and Zotero to support research activities, communication, collaboration, and networking (Bullinger et al., 2012; Espinoza et al., 2015; Mangan, 2012; Yu et al., 2016;). The most visited ASNT was Facebook. It is adducible that Facebook might have been visited more for its other social media attributes than for academic purposes. A review of 57 empirical studies on use of Facebook for academic purposes suggest that it had positive effects, and recommend its integration into teaching and learning, as it was considered as an effective platform for academic communication (Niu, 2019). From this study, Academia.edu, Mendeley and Google + were competitors of ResearchGate in terms of utilization. Similar patterns of utilization of ASNTs have been reported in literature (Jordan, 2019), where mostly ResearchGate, Academia.edu, and Mendeley were considered as the main platforms.

In line with previous reports, Nigerian University academics were positive about the use of ASNTs (Lupton, 2014; Mbada et al., 2023), however, there was a low utilization rate of ASNTs in this study. This could be due to competing engagement with other mainstream social media sites such as Facebook and Twitter among the study population, thus limiting how much ASNTs can be explored or maximized. The academics in this study engage ASNTs mostly for sharing research content to other academics and for making their academic research profile highly visible globally. Similarly, Nández and Borrego (2013) found that academics employed the use of social networks mainly to get in touch with other academics, disseminate their research results and follow other researchers' activities. Several researchers have identified that many academics of different background are adopting the use of ASNTs due to their simplicity, ease of use and promotion of research and research-related activities (Almousa, 2011; Gruzd et al., 2012; Mikki et al., 2015; Wang & Chen, 2012; Ward et al., 2015; Zaugg et al., 2011). In addition, ASNTs was employed by Nigerian University academics to post content related to their work, viewing other researchers' academic/professional profile and for making their academic/research profile highly visible. These academics perceived ASNTs as highly beneficial, which was similar to the finding by Sheikh (2017).

Results on facilitators or constraints to the use of ASNTs revealed that too busy schedule and poor maintenance of damaged internet connection facilities mostly inhibit use of ASNTs. Social influence facilitating use of ASNTs among the academic staff includes its increasing widespread use by peers and by junior academics. Moreover, the academic staffs do not perceive unreliable electricity supply and high cost of alternatives as a strong enough deterrent to using ASNTs. According to Lupton (2014), time pressure, lack of credibility,

possible plagiarism of ideas and the commercialization of content and copyright issues were perceived as barriers to the use of ASNTs which are contrary to the findings of this present study. Most of the academic staff in this present study has shown positive attitudes toward future use of academic social network tools as most felt that ASNTs help in gaining global recognition, aids specialization in field, connect them with people who have similar research interests and also help in keeping tracks of user's research domain.

In sum, social media is characterized as Web 2.0 resources that emphasize active participation, connectivity, collaboration, as well as sharing of knowledge and ideas among users. They are useful as an educational tool in universities, as it may enhance learning experience between students and teachers, as well as connect teachers with peers and other opportunities. This study corroborates assertions that ASNTs promote collaboration, knowledge sharing and discussion, and exchange of ideas (El-Berry, 2015). By scope, ASNTs are limited to the academic community, but they are designed to appeal greatly to academics. The number of members of these online academic social networks is constantly rising. It is therefore recommended from this study that capacity building of academics on the benefits of and technical know-how to engage and use social media tools more; particularly for pedagogy and curriculum delivery is required.

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