Technological Acceptance Model for Social Media Networking in e-Learning in Higher Educational Institutes

Samuel-Soma M. Ajibade* and Abdelhamid Zaidi

***Abstract*—Twitter and Facebook are popular among college educators. The use of social media in schools of higher learning has also been the subject of study. The use of social media has opened up new avenues of contact, collaboration, and participation between students and teachers. Accepting students and educators who make use of technological tools to do so requires insight into the factors that shape their propensity to do so. Using the Technology Acceptance Model (TAM) framework, which highlights perceived ease of use, perceived usefulness, and behavioral intention to use new technologies, this paper investigates the extent to which Nigerians are adopting social networking media for e-learning. Quantitative studies made use of surveys. Teachers and students from four different Nigerian schools participated in this survey. The suggested model factors were predicted using structural equation modeling (SEM). Intentions to utilize social media for e-learning by students and faculty at Nigerian institutions were shown to be impacted by these factors: perceived ease of use and perceived utility. The research is limited in that it does not offer any insight into interactive factors such interaction with research group members and peers, interaction with supervisors or lecturers, engagement, or active collaborative learning.**

***Index Terms*—Technology acceptance model, TAM, perceived ease of use, higher education, social media networking.**

I. Introduction

"Electronic Learning (E-Learning) is not the new concept to the educational organizations but there were no standard mechanisms developed in many countries around the globe". A sudden move towards pure e-learning process due to the pandemic since 2019 for both students and staff create a lots of confusion and difficulties for teaching, learning, and conducting assessment [1]. Teachers and students have been paying close attention to the Internet's impact on education in the last few years. Web 4.0 and Web 5.0 have sparked a new wave of interest and intrigue among internet users, especially those who use social networking sites on a regular basis [2]. Young adults, many of whom are in college, make up the majority of those who use social networking sites like Facebook and Twitter [3]. According to numerous studies, Facebook represents the most commonly utilized social networking site among college students, with an estimated 89 percent of them using it for educational purposes [3]. "A recent research of 3000 college students from the United States found that 90% of students use Facebook, 87% make use of Instagram and 37% utilizes Twitter" [4].

"Due to their widespread adoption, social networking sites like Facebook, Instagram, Snapchat, Tiktok and Twitter have garnered a great deal of media attention. Communication, collaboration, and engagement are now easier and more efficient thanks to social media sites and they have been implemented to aid various educational endeavors" [5].

Active e-learning is a process by which students connect and engage with one another and with content by means of social media like Facebook [6]. The term "social media" has come to encompass not just the Internet but also e-mail, intranet, blogs, video conferencing, picture discussion, wikis, and virtual mobile phone sectors [7, 8]. The concept of communication is best understood as a system that facilitates active, cooperative learning and interaction among a group of people through the sharing of information and discussion of various topics, including but not limited to content, opinions, interactions, experiences, and technologies [9].

Students' participation and discussion among peers, supervisors, teachers, and experts, better access to expert guidance, and better capacity for problem solving are all facilitated by the accessibility and use of social media [10]. There were statistically significant correlations between user reports of how simple and helpful they found the interface to be, and their levels of satisfaction with the product overall. Users with a larger number of friends and more frequent interactions with other students report much higher levels of happiness [11].

The rise of social media is a worldwide phenomenon, and Nigeria is no exception. According to the data, Nigeria has the fifth-highest number of Facebook users worldwide [12]. Various educational institutes spending huge amounts of time and money to provide education to their students at anytime and anywhere. Therefore, e-learning was chosen to develop virtual learning platform to provide education to their students [13]. Active, collaborative and e-learning through social media is widely recognized as beneficial by the student community. However, academic institutions in Nigeria face a dearth of studies on this subject. Thus, the current study seeks to close this knowledge gap by investigating how students' usage of social media for active, e-learning and participation can improve their academic outcomes. The technology acceptance model (TAM) served as inspiration for the study framework.

There is a model for describing an individual's IT acceptance behavior that was created from the Theory of Reasoned Action (TRA). This model is known as the Technology Acceptance Model (TAM). "Users' attitudes and opinions have a major role in whether or not they adopt or

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reject social media networking". An explanation of how social media networking adoption and how its usage are influenced can be found in the TAM model. "Perceived usefulness (PU) and perceived ease of use (PEOU) are the two key attitudes that affect whether or not a person would really utilize a piece of technology" [13]. "While both perceived ease of use and perceived perceived usefulness have a role in predicting user attitudes, E. Thesalonika *et al.* [14] found that the influence of perceived usefulness was 50% larger than the influence of perceived ease of use in predicting user attitudes toward utilizing a system, It has been found that perceived usefulness and perceived ease of use can be used to describe or forecast a person's intention to use a variety of technologies, including e-commerce, e-learning, e-library, e-tax filing and telemedicine technology" [15]. "A number of scholars have used TAM in e-learning research and discovered that an individual's behavioral intention to use e-learning systems is influenced by perceived ease of use and perceived utility" [16].

Based on the technology acceptance model (TAM), this research provided insight about perceptual factors of social media use in e-learning. The Perceptual factors included perceived ease of use, perceived usefulness, social media use and satisfaction of students [10]. Therefore, the perceptual factors affect learning performance of research students in Nigerian higher institution.

Academics and social scientists alike have used the social media network to study a wide range of phenomena and concerns. According to the existing literature on social media, a number of useful approaches can be implemented in the academic setting. However, the purpose of this study is to provide a model of how students might use social media for effective collaborative learning and engagement, with a focus on the ways in which students' interactions and perceptions shape their learning outcomes.

II. Literature Review

In the past several years, social networking has exploded in popularity all over the world. "Social media Network platforms like Facebook, Twitter, Instagram, Tiktok, and Snapchat [17] have evolved as one of the most popular online activities because to the rapid progress of communication technology and the widespread usage of the Internet."

Using social media for networking can improve e-learning [18]. Though instructors can employ SMM to create e-learning activities, it is students who stand to gain the most from this tool by actively enhancing their own educational opportunities. An increasing percentage of parents and educators are worried about the impact of students' and instructors' increasing reliance on social media in the classroom [19].

Numerous studies have shown that social media networking greatly improves classroom effectiveness. Multiple studies have demonstrated that using social networking sites like Facebook and Twitter can benefit students with their oral and written language abilities when learning a new language [20]. It is becoming increasingly acceptable for students to use social networking sites like Facebook, Twitter, and LinkedIn as electronic learning resources [21].

According to previous studies, social networking in higher education has its own set of difficulties and hurdles. College students in the United Kingdom were studied for their use of social networking [22]. The study had 76 questionnaire participants and 14 interview participants. The study found that there are 5 major difficulties associated with social media networking and learning, including copyright infringements, study inventiveness, a sense of information limitation, as well as lecturers who may not be ready or understand how to use and benefit from social media networking in their classrooms.

The focus of discussions about education at the university level has shifted from acquiring facts and figures to acquiring transferable skills as a way of life [23]. Employers place a high value on abilities like teamwork, which are included here [24]. H. Heidari Tabrizi *et al.* [24] provided the most comprehensive definition of active e-learning, which is when two or more people use e-learning platforms to acquire or attempt to learn new knowledge collaboratively. Given the broad definition of "social media," it is not surprising that most study has focused on specific social media tools like Instagram, Facebook, and Twitter as breakthroughs in education. This finding suggests that social media tools are still not widely used in classrooms. A similar study by S. Maheshwari *et al.* [25] found that college students are more likely to use social networking sites like Facebook and Twitter to supplement classroom instruction than are educators at more traditional educational institutions. Most institutions have the infrastructure and support for social media use, but teachers are sluggish to adopt it for educational purposes, according to X. Wang *et al.* [26] evaluation of social media in higher education classes.

The TAM model suggests that user perceptions of IT's usefulness are the best predictors of actual use [27]. However, J. A. N. Ansari *et al.* [28] found no connection between these factors and social media use. On the other hand, E. Lacka *et al.* [29] discovered that a positive outlook on information system (IS) use was negatively influenced by the perception that the system was useful [30]. Specifically, M. W. Karim *et al.* [30] claimed that there is no significant relationship between perceived usefulness and behavioral intention, which is counterintuitive. J. Kuem *et al.* [31] found no empirical support for the perceived usefulness-actual use relationship.

Perceived ease of use has a large effect on how beneficial something is thought to be, how people feel about using it, and whether or not they really do [32]. From a causal standpoint, the regression results suggest that ease of use may antecede usefulness, rather than being a parallel and direct determinant of use. Effort expectation relates to the level of ease associated with system usage, and was regarded by [33] to embody the ideas of perceived use (TAM/TAM2), complexity, and ease of use within the context of UTAUT [33].

The Technology Acceptance Model (TAM) proposed by E. W. Cheng *et al.* [34] is an extension of the Technology Acceptance Model (TRA) and provides a theoretical foundation for investigating how external variables affect internal beliefs, attitudes, and actual use, which in turn

influences user satisfaction and technology adoption. It's useful for analyzing what elements influence people's attitudes about new forms of IT and for explaining why people do the things they do when adopting those forms of IT [33]. According to the TAM model, individuals' levels of confidence in the system's ability to boost their performance depend on their perceptions of both the system's perceived usefulness and simplicity of use [34]. This study uses a TAM-based questionnaire to investigate how students' and faculty members' attitudes about and use of social media for active collaborative learning and participation in Nigerian higher education settings affects students' academic outcomes.

"The most important factors promoting the popularity of social media network are their functionality, ubiquity, and ease" [35]. "Social network technologies may help students better absorb curriculum and improve interactions with others, according to some" [36]. "Several studies have revealed four benefits of social media in higher education such as improving motivation for learning, fostering relationships, fostering teamwork, and providing students with individualized course materials are all examples of these strategies" [37].

Even if using social media in institutions of higher learning has many advantages, there are also some drawbacks. One of most serious issues with social media is the risk of wasting valuable time on unimportant activities [38]. For the reasons outlined above, this study analyzes how using social networking media affects students' and teachers' perceived ease of use and perceived usefulness in institutes of higher learning in Nigeria.

III. Research Question

Despite the fact that social media technologies were utilized in the classroom, two research issues must be answered before Nigerian higher education institutions can use social media technology in e-learning in the country.

Q1: Are the perceived benefits and ease-of-use of e-learning correlated with the intensity with which social media is used in Nigerian higher education institutions?

Q2: What effect does the rate with which people utilize social media have on how easily and usefully they view e-learning to be for their education in Nigerian higher education institutions.

IV. Research Methodology

A. Study Plan

Qualitative and quantitative research methodologies were employed in order to find answers to the study's questions. As part of the study's "mixed strategy," researchers employed both of these research approaches. In the mixed methodology technique, a survey is the method that was chosen. For theory testing, survey research has been most typically utilized in non-experimental design. From a managerial standpoint, a survey research could corroborate the study outcomes' external validity. Oral and written surveys are the focus of this investigation. For the purposes of this article, we'll refer to a written survey as the administered questionnaire. This study utilized a mail survey.

Respondents were interviewed after completing a questionnaire survey. Those who completed the survey were given the option of taking part in an interview at the end of it.

It was entirely up to them whether or not they participated in the interview. The interview sought qualitative data on e-learning implementation in Nigerian higher education institutions and teachers' and students' attitudes on e-learning.

The interviews were also used to provide more information. Interviews help researchers grasp respondents' perspectives, ideas, attitudes, sentiments, and event views [39].

B. Population Size and Sample Size

All the participants in this research are from Nigerian institution of higher learning. There were two sections to the polls, each with its own survey questions.

A random sampling was done in which students and teachers were asked to fill out a self-administered survey in the first phase of the study. Students and teachers were asked to return for a second round of interviews. This study recruited volunteers from a public university, public polytechnic, private university, and private polytechnic. They were selected for the following factors:

Two of these institutions are located in urban areas, while the other two are in rural locations, illustrating Nigeria's geographic variety.

We chose University of Benin as our public university and The Federal Polytechnic Ado Ekiti as our public polytechnic because of the sheer size of their student bodies and the fact that they draw students from all around the country.

It was decided that the private institutions would be Babcock University and Allover Central Polytechnic. A small sample size means that the percentage of students and teachers from each university is irrelevant.

Once respondents had filled out the questionnaire, a follow-up interview was undertaken. A voluntary interview was offered at the conclusion of the questionnaire. According to the number of people who agreed to participate in an interview survey, there was really no minimum sample size. The students and faculty of 4 Nigerian institutions of higher learning were the focus of this study, which included one public university, one public polytechnic, one private university and one private polytechnic.

The population size includes 150 student questionnaires and 150 teachers' questionnaires were administered at the public university. Simultaneously, 100 student questionnaires and 100 teachers' questionnaires were administered at the private university. Furthermore, 130 student questionnaires and 130 teachers' questionnaires were administered at the public polytechnic. Also, 70 student questionnaires and 70 teachers' questionnaires were administered at the private polytechnic. Consequently, 450 student questionnaires and 450 faculty questionnaires were sent to students and faculty in the four institutions of higher learning. 368 of the 450

questionnaires issued to students were received, and 39 were rejected because of incomplete data due to the participants' inability to complete the questionnaires. This

study's overall response rate is 81.7%. There were 450 questionnaires issued to teachers, but only 240 were received in a manner that could be used in the analysis, and 9 were thrown out because they had missing data. 53.3 percent of teachers participated in this study. Respondents to the questionnaire were evaluated using SPSS version 21 (SPSS). In Table I, the information and statistics about the students and teachers are shown.

TABLE I: TEACHERS AND LEARNERS DEMOGRAPHY PROFILE

	Students		Teachers	
	Frequency	Percent	Frequency	Percent
Gender				
Male	209	56.8	152	63.3
Female	159	43.2	88	36.7
Age				
18 – 29 yrs	251	68.2	27	11.3
30 – 49 yrs	113	30.7	124	51.7
50 above	4	1.1	89	37.1
Type of Institution				
Public Uni	118	32.1	78	32.5
Private Uni	86	23.4	52	21.7
Public Poly	105	28.5	65	27.1
Private Poly	59	16.0	45	18.8
Use of social media				
Yes	354	96.2	191	79.6
No	14	3.8	49	20.4
Social media mostly used				
Facebook	151	41.0	130	54.2
Instagram	101	27.4	19	7.9
Snapchat	15	4.1	7	2.9
Tiktok	16	4.3	10	4.2
Twitter	65	17.7	23	9.6
Others	8	2.17	4	1.7
No social media	12	3.1	47	19.6
Rate of social media use				
Once a month	24	6.5	15	6.3
Once a week	41	11.1	21	8.6
Once a day	109	29.6	39	16.3
More than once a day	180	48.9	124	51.7
Never use	14	3.8	41	17.1

C. Research Hypothesis and Model

This study examines the use of social media networking in Nigerian higher education to assess how easy it is to use and how useful it is. Extensive (TAM) was used to examine the variables that can affect the acceptability of modern technologies in education - learning. In a variety of situations, the TAM has been shown to be an excellent technique for predicting and describing how people will utilize technology [40].

A research methodology for evaluating the influence of perceived ease of use and perceived usefulness of social media network for e-learning in Nigerian education system has been proposed using TAM (see Fig. 1). Variables in the model include, for example, the use of social media, perceptions of variables, mindset, and behavioral intent.

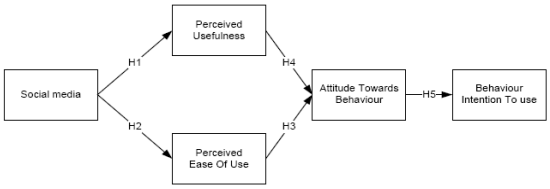

Fig. 1. Research model.

D. Social Media Networking

In [41], social media is an essential teaching and learning tool that should be utilized to its fullest extent. Student learning outcomes can be improved by using social networking at educational institutions [41]. It is possible for students to use the Internet as a learning aid by embracing a social media network strategy [42]. Students' and teachers' experiences in online learning have been examined in a number of studies [38]. The following are possible alternative hypothesis to test in this investigation.

H1a: Students' perceived usefulness of e-learning in Nigerian institutions are affected by social media use.

H1b: Teachers' perceived usefulness of e-learning in Nigerian institutions are affected by social media use.

H2a: In Nigerian higher education institutions, social media use influences students' e-learning's perceived ease of use.

H2b: Nigerian teachers' e-learning's perceived ease of use are affected by social media use.

E. Perceived Usefulness and Perceived Ease of Use

Perceived ease of use and usefulness affect TAM behavioral intentions [43]. Significant number of studies have linked perceived usefulness and ease of use. According to Z. Yu [35], L. Chen *et al.* [36], perceived usefulness (PU) is linked to e-learning technology attitudes. The research analyzes the link between the elements using various hypotheses:

H3a: The perceived ease of use influences the attitude of learners' as pertaining e-learning in Nigerian institutions.

H3b: The perceived ease of use influences the attitude of teachers' as pertaining e-learning in Nigerian institutions.

H4a: The learners' perceived usefulness of e-learning impact its utilization in Nigerian institutions.

H4b: The teachers' perceived usefulness of e-learning impact its utilization in Nigerian institutions.

F. Attitude Towards Use (ATU)

"A person's attitude toward engaging in a particular behavior is defined as either a positive or negative feeling" [44]. When it comes to successful deployment of social media, having a "positive attitude toward social media" is commonly considered as a precondition [45]. As indicated by S. Koul *et al.* [46], "the success of e-learning depends on various aspects, such as the attitudes and happiness that users have with using technology in the teaching and learning process". Furthermore, "research has demonstrated that teachers' attitudes toward technology and how it affects their

work can be used to build more appropriate technology skills training for education and a better incorporation of technology into the teaching process is also facilitated by this" [47]. There is a considerable correlation between teachers' attitudes toward technology and their success in employing it for learning. "It has been demonstrated in studies that people are more likely to adopt new technology if they have a rather more positive attitude toward it" [47].

There are two possibilities here (because the null hypothesis has no bearing):

H5a: ATU influences Nigerian students' behavioral intention to adopt E-learning.

H5b: ATU influences teachers' behavioral intention to adopt E-learning in Nigerian universities.

V. Data Analysis

Testing causal links and assessing hypotheses research models were done using AMOS software Version 21. This study's data was evaluated in two stages. First, the measurement model's constructs were tested for validity and reliability. It also tested the structural model's hypotheses. The measurements and structural models were calculated with maximum likelihood estimation (MLE).

A. Development of a Measuring Model

Items of each factor were evaluated for their multivariate normality and internal consistency. An exploratory factor analysis (EFA) was used to show that the items of each measurement were uni - dimensional. In each latent construct, the measurement model was used to establish that the items were valid and reliable.

Using Cronbach's Alpha (α), the dependability of each factor was evaluated. Cronbach's Alpha of at least 0.7 is adequate for internal consistency [48]. Tables II and IV display the reliability value for each factor. Reliability levels of 0.7 or higher are deemed satisfactory. The convergent and discriminant validity of the construct were investigated. Composite reliability (CR) and Average Variance Extracted (AVE) were used to assess convergent validity [49]. To be regarded satisfactory, the Average Variance Extracted (AVE) should be at least 0.5, while the frequently used figure for Composite Reliability is at least 0.7 [50]. A $p<0.001$ indicates statistical significance, as shown in Tables II and IV. Each factor's loading value exceeds or equals this value.

TABLE II: Student Construct Reliability

Variables	Elements	Factor loading	CR	AVE	α
Social Networking	SN1	0.918	0.958	0.761	0.911
	SN2	0.845			
	SN3	0.779			
	SN4	0.744			
Perceived ease of use	EOU1	0.786	0.920	0.644	0.939
	EOU2	0.942			
	EOU3	0.760			
	EOU4	0.856			
Perceived Usefulness	UFN3	0.652	0.879	0.644	0.881
	UFN4	0.921			
	UFN5	0.918			
Attitude	ATD3	0.702	0.874	0.628	0.879
	ATD4	0.848			
	ATD5	0.841			
Bahvioural Intention	BIT1	0.889	0.942	0.734	0.843
	BIT2	0.824			
	BIT3	0.989			

TABLE III: Model of Students' Relationship among the Variables in the Model

	1	2	3	4	5
1	1.000				
2	0.467	1.000			
3	0.367	0.563	1.000		
4	0.563	0.571	0.456	1.000	
5	0.575	0.560	0.581	0.637	1.000

Where 1 represents "Social Networking", 2 represents "Ease of Use"; while 3 represents "Behavioral Intention", while 4 also stands for "Usefulness" and 5 "represents" Attitude

TABLE IV: Teachers Construct Reliability

Variables	Elements	Factor loading	CR	AVE	α
Social Networking	SN1	0.832	0.935	0.721	0.947
	SN3	0.928			
	SN4	0.913			
Perceived ease of use	PEOU1	0.931	0.920	0.833	0.902
	PEOU3	0.948			
	PEOU4	0.903			
Perceived Usefulness	PU2	0.732	0.879	0.682	0.923
	PU3	0.958			
	PU5	0.893			
Attitude	ATI2	0.768	0.874	0.618	0.951
	ATI3	0.973			
	ATI5	0.601			
Bahvioural Intention	BIT1	0.959	0.942	0.997	0.915
	BIT2	0.908			
	BIT4	0.910			

"The difference between a construct and its indicators and another's is measured by its discriminant validity" [51]. It can also be used to determine how distinct a particular construct is from others [52]. "It is recommended by S. S. Ajibade *et al.* [53] that correlations between items within any two constructs be smaller than the square root of the AVE shared by all items within that construct". To meet acceptable discriminant validity, every signal must assess its target constructs to the greatest extent possible. There should be at least one construct and its measures with an AVE greater than the AVE of the model's other constructs. Tables III and V show the results of this study, which used the correlation approach to assess discriminant validity. This is seen in Tables II and IV, which exhibit the convergent validity results. The conditions for convergent validity were met for all of the constructs.

B. Evaluation of Structural Model

AMOS was utilized to test hypothesis pathways and evaluate model variance (R^2). There were six goodness-of-fit indices evaluated in the research: the x^2-square test, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), Tuker-lewis Index (TLI) as well as the root mean square error of approximation

(RMSEA). More than or equal to 0.9 is required for TLI, GFI, and CFI to meet model specifications, and x2-square should be less than 3 [54]. RMSEA must be lower than 0.08 while AGFI must be more than 0.8 [55]. In the previous section, we proposed some general criteria for (AMOS), the results of which are shown in Tables VI and VII. There appears to be a good match between measured data and the proposed fit criteria for the structural model.

TABLE V: MODEL OF TEACHERS' RELATIONSHIP AMONG THE VARIABLES IN THE MODEL

	1	2	3	4	5
1	1.000				
2	0.467	1.000			
3	0.367	0.563	1.000		
4	0.563	0.571	0.456	1.000	
5	0.575	0.560	0.581	0.637	1.000

where 1 represents "Social Networking", 2 represents "Ease of Use"; while 3 represents "Behavioral Intention", while 4 also stands for "Usefulness" and 5 "represents" Attitude

TABLE VI: SAMPLE STUDENT RESULTS RELATING TO THE GOODNESS-OF-FIT MODEL

Fitness index	Criteria	Values	References
x^2-square	<3.0	1.895	[54]
GFI	≧0.9	1.01	[55]
TLI	≧0.9	1.03	[54]
CFI	≧0.9	1.04	[55]
AGFI	>0.8	0.98	[46]
RMSEA	<0.08	0.041	[46]

TABLE VII: SAMPLE STUDENT RESULTS RELATING TO THE GOODNESS-OF-FIT MODEL

Fitness index	Criteria	Values	References
x^2-square	<3.0	1.421	[54]
GFI	≧0.9	1.12	[55]
TLI	≧0.9	1.07	[54]
CFI	≧0.9	1.07	[55]
AGFI	>0.8	0.98	[46]
RMSEA	<0.08	0.052	[46]

VI. HYPOTHESIS OUTCOME AND DISCUSSION

Structural models 1 and 2 are depicted in Fig. 2 and Fig. 3. Model-to-model path coefficients and their significance levels are computed using this test. Multiple correlations (R2), a measure of variance that can be demonstrated by independent constructs, are also available as part of this test.

Predicting e-learning's perceived usefulness in model 1 by social networking (β=0.308, p<0.001). The Perceived Usefulness (R2=0.55) was 55% explained by this variable. Hypotheses H1a, on the other hand, are supported. Social networking predicted perceived ease of use (β=0.339, p<0.001) The Perceived Ease of Use (R2=0.47) was 47% explained by this variable. Hypotheses H2a were therefore validated.

Perceived Ease of Use (β=0.476, p<0.001) and Perceived Usefulness (β=0.574, p<0.001) predicts Attitude towards Behavior. These factors described 59% of Behavior Attitude (R2=0.59). Hence hypothesis H3a, H4a were validated. Attitude towards behavior (β=0.634, p<0.001) influences behavioral intention to use and explains 38% of the variation. Thus, hypothesis H5a was found to be confirmed.

In model 2, social networking predicts e-learning perceived usefulness (β=0.537, p<0.001). This measure described 68% of Perceived Usefulness (R2=0.68). Hence, hypothesis H1b confirmed. Social networking predicts perceived ease-of-use (β=0.471, p<0.001). This measure described 51% of Perceived Ease of use (R2=0.51). Hence, hypothesis H2b supported.

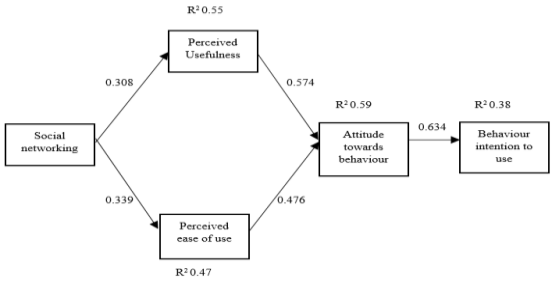

Fig. 2. Students structural model.

Perceived Ease of Use (β=0.395, p<0.001) and Perceived Usefulness (β=0.782, p<0.001) predicted Attitude towards Behavior. These variables explained 78 percent of Attitude towards Behavior (R2=0.78). Hence hypothesis H3b, H4b confirmed. Attitude towards behavior (β=0.811, p<0.001) influences behavioral intention to use and describes 75% of the variance. hypothesis H5b was confirmed. All alternative hypotheses have strong statistical validity, because the indices are positive.

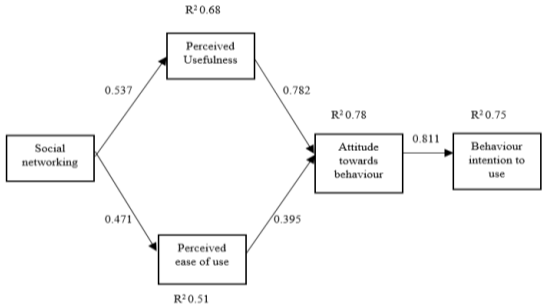

Fig. 3. Teachers structural model.

This study's findings suggest a critical impact played by social media networking in the spread of online learning across Nigerian institution of higher learning. Learners' and teachers' perceptions of social networking sites' ease of use and usefulness differ greatly, as researchers predicted [56]. As a result, individuals in Nigeria who believe that social media networking is more valuable will be more likely to employ e-learning technologies for their education. Adoption of e-learning depends on characteristics such as convenience of use and usefulness, according to J. F. Hair *et al.* [57], A. M. Elkaseh *et al.* [58]. In this study, researchers discovered that learners and teachers who often used social networking sites in their daily life had more favorable views of e-learning.

According to a new study, social networking ease of use and e-learning acceptance are more closely linked. Learners and teachers who often and/or heavily use social media platforms have a high likelihood of embracing e-learning

technologies in the classroom and learning [59]. Higher institution students displayed a much more positive behavior towards interaction between school peer and academic accomplishment via social interactive blogs [60].

VII. Conclusion

This research aims to examine the perception of e-utility learning's and ease of use in Nigerian universities, as well as the relationship between the use of social media networks and these hypotheses. Since TAM was used to provide insight into the perceptual factors such as perceived ease of use, perceived utility, and social media networking use within four higher institutions, both public and private universities and polytechnics in Nigeria were included in the sample. The key takeaway of this paper is that the willingness of students and teachers in Nigerian universities to adopt and use e-learning is strongly influenced by their opinions on the utility and accessibility of social media networking sites. The research is limited in that it does not offer any insight into interactive factors such interaction with research group members and peers, interaction with supervisors or lecturers, engagement, or active collaborative learning. In conclusion, the widespread use of SNS has a positive impact on both students' and faculty members' views on the accessibility of e-learning resources in Nigerian universities.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

SM conceived the idea and drafted the article; AZ analyzed the data, came up with the model and carried out thorough proofreading of the article. All authors approved the final version of the article.

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