Determinants of Use of Social Media Platforms among Extension Professionals in Southwest, Nigeria

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ABSTRACT

Opportunities to share and providing access to agricultural information at a much faster pace to a wider audience through a variety of user-friendly platforms can be achieved through the use of social media. This study investigated use of social media platforms among extension professionals in Southwest, Nigeria. Two hundred and five respondents were selected through multistage sampling and used for the study. The findings revealed that majority of respondents were between 36 and 50 years, 52.2% were male, 39.5% had B.Sc, 22.9% had HND, 15.1% had PGD, 12.2% had Ph.D and 10.2% had M,Sc/M.Phil, Over half (58%) of respondents had moderate awareness on use of WhatsApp for extension service delivery. Results of regression analysis showed positive and significant influence of performance expectancy (β=.199, p<.05), effort expectancy (β=.170,

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p<.05) and social influence (β=.139, p<.05) on use of social media platforms. From the result of the study, it was found that performance expectancy, effort expectancy and social influence were predictors of social media use, and recommended that in the use of social media for extension service delivery, these factors should be given attention in the study area.

1. INTRODUCTION

Social Media refers to Internet-based tools for sharing and discussing information among people. Social media also refers to the user generated information, opinion, video, audio, and multimedia that is shared and discussed over digital networks [1].

Networks provide the medium through which people learn of an innovation. Adoption then initiates a chain reaction of adoptions through the network. Social media platforms change the dynamics of social networks in at least three ways - by encouraging expansion of the scope and density of networks; speeding the diffusion of information between links and increasing the visibility of opinions and behavior across the network [2]. Social media has been widely used by young people and adolescents for several purposes such as communication, entertainment, and learning [3]. Since the introduction of social media, communication is becoming more and more dynamic every day. For agricultural extension and advisory services (AEAS), whose primary element is communication, social media platform can be a potential goldmine to engage with clients online, helping rural community gain a voice, making development bottom-up, more fruitful innovation brokering and bringing all the actors in agricultural innovation systems on the same platform.

But in-spite of all the advantages, its actual use in developing countries is still low due to infrastructural difficulties, awareness and psychological barriers. Also, skill and competence in using social media is also lacking. A study conducted on cyber Extension (University Based Extension Based Project for Agricultural Research) found that the web could be effectively used to facilitate extension work, appropriate forum for educational outreach and cost-effective means to reach extension agents, educators and opinion leaders who will transfer the knowledge gained to their clientele [4]. Achieving food security requires new levels of innovation and internet can play a crucial role by enabling and facilitating agricultural innovation systems; providing rapid and efficient means of sharing and accessing information across the entire agriculture value chain.

According to Agwu, Uche-Mba & Akinnagbe [5] there is likely to be stagnation in the dissemination, utilization and application of scientific agricultural information for purposeful development of the system if modern ICT facilities (such as social media) are not adequately built into the mainstream of Nigerian agricultural extension system. Although a lot of extension professionals are on social media [6], no studies has been able to use UTAUT factors to determine its use by extension professionals in Souththwest, Nigeria. Thus this study examined the determinants of social media platforms use using unified theory of acceptance and use of technology (UTAUT) factors. The study specifically assessed the influences of performance expectancy, effort expectancy and social influence on use of social media platform.

The unified theory of acceptance and use of technology (UTAUT) developed by Venkatesh, Morris, Davis, and Davis [7] was used as the theoretical foundation for this study. The UTAUT proposed four major factors such as performance expectancy, effort expectancy, social influence, and facilitation conditions as the predictor of the intention to adopt and use new technology [7]. These constructs are also moderated by gender, age, experience, and voluntariness of use (Venkatesh et al., 2003). According to [7], performance expectancy is when the user believes that the use of technology would enable him or her to accomplish a specific task or job performance. The effort expectancy is the user understanding that the use of particular technology-related applications would be easy to use and will require lesser efforts for the same results [7]. Social influence is a situation whereby the user decides to use a particular technology which is influenced by friends and family as well as important persons in the society (peer pressure) while the facilitating conditions is the

user anticipation that there are available the required resources (organizational and technical infrastructure) to enable him or her use a particular technology [7]. This study did not assess facilitating condition because respondents were not compelled to use social media according to [7].

The UTAUT has been applied widely to understand the decision or intentions of users to engage in particular technology across several fields such as e-commerc.e, e-business, e-learning, m-government, and e-government. For instance, the UTUAT has been determined to impact the user intention to use e-commerce/e-business-related applications [8]. Previous studies found that performance expectancy, effort expectancy and social influence have influences on use intention and usage of social media.

1.1 Objectives of the Study

The study specifically described the socioeconomic characteristics of respondents, ascertained the social media level of awareness; and determined the influence of performance expectancy, effort expectancy and social influence on use of social media platform.

2. METHODOLOGY

2.1 The Study Area

The South-West Agricultural Zone of Nigeria lies between latitudes 5^0 N and 9^0N and longitudes 2.50 and 60E of the Greenwich meridian. It is bounded by the Atlantic Ocean in the South, Kwara and Kogi States in the North, Anambra State in the east, and the Republic of Benin in the west. It has an area of 114271 square Km (Shaib, Aliyu and Bakshi, 1997). The climate is predominantly humid with rainfall from 1500 to 3000mm per annum. The mean monthly temperature ranges from 18^0C to 24^0C during rainy season and 20^0C to 35^0C during the dry season. Farming is the major occupation of the majority of people in the States.

2.2 Sampling Procedure

This study is a descriptive survey research designed to find out the determinants of use of social media platforms by extension professionals (EP) for extension service delivery. The target populations for this study include EP from Universities, Research Institutes, and Agricultural Development Project (ADP) Southwest, Nigeria. Multistage sampling was used to select a sample of 233 out of which 205 valid questionnaires representing 87.9% validity rate was used for this study. A total of 134 respondents were randomly selected from ADPs, while 48 and 42 respondents from research institutes and universities were purposively sampled.

2.3 Data Collection and Measurement of Variables

Data were collected through the use of questionnaire. Data on awareness was measured as 2 for yes and 1 for no, while those on the three UTAUT factors, that is performance expectancy, effort expectancy and social influence were measured as strongly agreed [5] agreed [4] undecided [3] disagreed [2] strongly disagreed [1].

2.4 Hypothesis of the Study

It was hypothesized that UTAUT factors (performance expectancy, effort expectancy and social influence) have no influence on use of social media platforms.

2.5 Analytical Technique

Frequency count and percentages were used to achieve objective I, mean score for objective ii and regression analysis for objective iii and the hypothesis of the study. Regression analysis was used to determine the influence of each independent variables on the dependent variable. The implicit model of Regression is $Y = \log A + b_1x_1 + b_2x_2 + b_3x_3$. Log A = constant, X_1 = Performance expectancy, X_2 = Effort expectancy, X_3 = Social influence

3. RESULTS AND DISCUSSION

3.1 Age

Results in Table 1 show that 40% of respondents were between the age range of 36 and 50 years, 30.7% were above 50 years while 29.3% were below 35 years. This implies that most of the extension professionals in South west, fell between 36 and 50 years. This indicates that extension profession has a brighter future since most of them were relatively young. Also, it can be envisaged that being young, they should be familiar with the use of social media often

ascribed to young individuals. This result is similar to Suchiradipta and Saravanan [9] that 48.2% of users of social media among extensionists and scientists in Sub-Saharan Africa are between 26 and 45 years.

3.2 Sex

Results in Table 1 show that 52.2% of extension professionals were males, while the remaining 48.8% were females. This implies that there are more male extension professionals than females in Universities, Research Institutes and ADPs in Southwest, Nigeria. This result is similar to Mensah [10] that 51.8% were male and 48.2% were female users of e-government users among the university students in the city of Habin in China. It is contrary to Ajayi, Alabi and Akinsola [11] who found that 71.9% extension agents in ADPs in Ondo State were male and 28.1% were females. Similarly, Banmeke and Oose [12] reported that 61.4% of researchers in Universities and research institutes in Southwest, Nigeria were males and 38.8% were females. It also agrees with the results of Tyabo, Adesiji, Ibrahim, Umar and Ndanista [13] who reported that 61.6% users of mobile phone among rural dwellers in Niger State were males while 38.4 percent were females. It can be inferred that both male and female extension professional but more males use social media for extension activities.

3.3 Education Level

Results in Table 1 show that 39.5% of respondents had B.Sc, 22.9% had HND, 15.1% had PGD, 12.2% had Ph.D and 10.2% had M,Sc/M.Phil. This results indicate that majority of the respondents had B.Sc. Nevertheless the study represents a highly educated group whose education should help them decide the type of tools that will help them to be effective in their obligation. The result is similar to [5] that 32.5% extension workers in Enugu and Abia States had B.Sc. According to Mamen & Paxson [14], good level of education can influence individual's ability to higher economic returns, better access to technology and sources of information.

3.4 Respondents' Awareness of Social Media

Results in Table 2 show that 82.4% of respondents were aware of WhatsApp, followed by Youtube 82%, Facebook 74%, Google+ 71.2%, Twitter 64.9%, Yahoo 63.4%, Blog 48.8%, e-wallet 42.0% Farmer helpline 41.5% and Academia 38.5%. The result indicate that majority of respondents are aware of WhatsApp. The result is similar to 2019 observation of the Global State of Digital that 85% of Nigerian users of social media use of WhatsApp followed by Facebook (78%) and Youtube (53%) the fifth. This implies that Whatsapp is the most active social media platform in the country.

Table 1. Distribution of respondents according to their socio-economic characteristics (n = 205)

Variables	Frequency	Percentage (%)
Age (in years)		
35 and below	60	29.3
36-50	82	40.0
Above 50	63	30.7
Sex		
Male	105	51.2
Female	100	48.8
Marital status		
Single	84	41.0
Married	79	38.5
Separated	27	13.2
Widowed	15	7.3
Educational level		
HND	47	22.9
B.Sc.	81	39.5
PGD	31	15.1
M.Sc./M.Phil.	21	10.2
Ph.D.	25	12.2

It further confirms that WhatsApp, Facebook and Youtube are among the best five social media platform often used in Nigeria. According to Gharis, Bardon, Evans, Hubbard and Taylor [15] who found that Facebook, Youtube, Blog provide large potential for use to extensionists but the content and outreach needs to be determined. However, the result in Table 2 further revealed that Academia and farmer helpline were ranked lowest. These are not commonly used social media for extension service in the study areas which may be the reason for low awareness about them.

3.5 Test of Hypothesis

3.5.1 UTAUT factors (performance expectancy, effort expectancy and social influence) have no influence on frequency of use of social media platforms

Results in Table 3 show that performance expectancy positively influenced frequency of use of social media platforms (β=.199, p<.05). Therefore, null hypothesis was rejected. This means that when extension professionals expect social media platform use to increase their performance, they increase their frequency of use of it. It implies that individual extension professional who strongly agreed that social media platforms would improve their extension delivery were 46.1 percent more likely to accept and use social media platforms for extension service delivery than those who countered its use.

Effort expectancy also positively influenced use of social media platforms by the respondent group (β=.170, p<.05). Therefore, Null hypothesis was rejected. This means that when extension professionals expect social media to be easy to use, their intention to use it increases.

This result implies that individual who strongly agreed that it would be easier for them to use social media platforms for extension delivery in various agricultural extension outlets such as research institutes, universities and ADPs were 17.0 percent more likely to adopt and use social media platforms than those who have contrary opinion. Social influence positively influenced frequency of use of social media platforms (β=.139, p<.05). This indicates that social influence is a determinant of social media platforms use. The implication of this finding is that the respondents who considered social influence to be of great importance as an influential factor to their usage of social media were 13.9% more likely to use social media platforms than those who responded to the contrary. [3] mentioned statistically insignificant effect of social influence on intention to use ICT for undergraduate students in Ghana. However, when moderated by age, gender and experience there was relationship between it and experience. That is, only one of the three moderators (experience of social media) tested could moderate the influence of social influence on use of social media platform among extension professionals. This implies that no matter how old or young, whether male or female, but being technologically culturated could determine the use of social media among extension professionals in Southwest, Nigeria. This is not similar to Nejadrezaei, Allahyari, Sadeghzadeh, Michailidis and ElBitali, [16] who found that none of the three moderators had influence on UTAUT factors. This finding is therefore in consonance with the popular conception that being technologically culturated, (that is having prior knowledge via use of other ICTs) or exposure to social media use as a result of being born in technologically advanced nations such as the USA, Germany, UK, China) is a condition to understand the use of social media.

Table 2. Distribution of respondents according to their awareness of social media platforms

Social media platform*	Frequency	Percentage (%)	Rank
Facebook	153	74.6	3rd
Twitter	133	64.9	5th
Youtube	168	82.0	2nd
Blog	100	48.8	7th
WhatsApp	169	82.4	1st
LinkedIn	92	44.9	8th
Google+	146	71.2	4th
Academia	79	38.5	11th
Farmer helpline	85	41.5	10th
e-wallet	86	42.0	9th
Yahoo	130	63.4	6th

Multiple responses

Table 3. Regression of determinants of Extension Professionals' use of social media platforms

Constructs	Frequency of use of social media						
	B	R	B	SE	Beta	t	Sign.
P.E	.199*	.040	.545	.188	-.199	17.875	0.004
E.E	.170*	.029	-.385	.158	-.170	21.313	0.016
S.I	.139*	.139	-.391	.197	-.138	17.657	0.048
P.E*AG	.212	.045	.606	.593	.072	1.023	.506
P.E*GDR	.203	.041	.424	.839	.614	.506	.308
P.E*EXP	.228	.052	-.624	.387	-.123	-1.612	.108
E.E*AGR	.193	.037	.717	.587	.092	1.323	.187
E.E*GDR	.176	.O31	.550	.847	.047	0.650	.517
E.E*EXP	.214	.046	-.726	.384	-.143	1.889	.060
S.I*AG	.165	.027	.760	.594	.090	1.280	.202
S.I*GDR	.150	.023	.698	.843	.059	.828	.409
S.I*EXP	.209*	.044	-.824	.366	-.167	-.252	.025

P.E=Performance Expectancy, E.E=Effort expectancy, S.I=Social influence, AG=Age, GDR=Gender, EXP=Experience, *p=0.05 level of significance

However, performance expectancy has the strongest influence over other UTAUT factors and the moderators in determining the use of social media. This indicate that performance enhancement intended by users of technology determines the need for its use.

4. CONCLUSION AND RECOMMENDA-TION

From the findings of this study it was concluded that WhatsApp was highest and academia least popular platform out of eleven social media platforms assessed. The three UTAUT factors had influence on the use of social media but performance exectancy had the strongest influence indicating that performance enhancement determined the use of social media in the study areas. There was no effect of any of the moderators on the relationship between each of them and use of social media which implies that being technologically culturated, that is having prior knowledge including use of other ICTs or exposure to social media use through birth in technologically advanced nations such as the USA, Germany, UK, China were not important factors to use social media among EP in Southwest. Nigeria. Therefore, from the findings of the study, it was recommended that in the use of social media for extension service delivery, these factors should be given attention especially in the study areas.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Andres, Dustin and Josh Woodard. Social Media Handbook for Agricultural Development Practitioners. USAID and FHI360; 2013. Available:http://ictforag.org/toolkits/ social/SocialMedia4AgHandbook.pdf
2. World Bank.: World Bank estimate based on United Nations World Urbanization Prospect; 2016.
3. Chukwudi J, Maduike G, Constance C. Social media and academic performance of business education students in South-East Nigeria. Journal of Education and Practice. 2015;6(25):127-134.
4. Attuquayefio SN, Addo H. Using the UTAUT model to analyze students' ICT adoption. International Journal of Education and Development using Information and Communication Technology. 2014;10(3):75-86.
5. IICD (International Institute for Communication and Development): ICTs for Agriculture Livelihoods: Impact and Lessons Learned from IICD Supported Activities. The Hague: IICD; 2006.

Available:http://www.iicd.org/files/IICDagri-impact-2006.pdf, accessed July 2014

6. Agwu EA, Uche-Mba UC, Akinnagbe OM. Use of Information Communication Technologies (ICTs) among researchers, extension workers and farmers in Abia and Enugu States: Implications for a National Agricultural Extension practice", Journal of Agricultural Extension. 2008;12(1):37-49.

7. Sokoya AA, Onifade FN, Alai AO. "Establishing connections and networking: The Role of Social Media in Agricultural Research in Nigeria" (Ed.), World Library and Information Congress, Helsinki February 24-28 INFLA Geneva. 2012;1-14.

8. Venkatesh V, Morris M, Davis G, Davis F. User acceptance of information technology: Toward a unified view. MIS Quarterly. 2003;27:425-478.

9. Awiagah R, Kang J, Lim JI. Factors affecting e-commerce adoption among SMEs in Ghana. Information Development. 2016;32:815-836.

10. Suchiradipta B, Saravanan R. Social media: Shaping the future of agricultural extension and advisory services, GFRAS interest group on ICT4RAS discussion paper, GFRAS: Lindau, Switzerland; 2016.

11. Mensah KI. Factors Influencing the Intention of University Students to Adopt and Use E-Government Services: An Empirical Evidence in China. SAGE Open Journal. 2019;1-19.
Available:https://us.sagepub.com/en-us/nam/open-access-at-sage

12. Ajayi AO, Alabi OS, Akinsola TO. Knowledge and perception of Extension agents on information and communication technologies (ICTs) use in Extension service delivery in Ondo state, Nigeria. African Journal of Agricultural Research. 2013;8(48):6226–6233. Banmeke TOA, Oose MO. Assessment of the Use of Social Network Tools (SNTs) by Agriculture Researchers in South West Nigeria, Journal of Communications of the IIMA. 2012;12(3).

13. Tyabo IS, Adesiji GB, Ibrahim MIS. Umar, Ndanisa MA. "Perceived effects of mobile phone on the livelihood of rural dwellers in Niger state, Nigeria" Madukwe, M.C., (Ed.). in Agric Ext. and sustainable Family planning in Nigeria Proceedings NAERLS, ABU Zaria, May 17-15, AESON Ilorin. 2015;200-211.

14. Mamen K, Paxson C. Women's work and Economic Development, The Journal of Economic perspective. 2000;14(4):141-164

15. Gharis LW, Bardon RE, Evans JL, Hubbard WG, Taylor E. Expanding the reach of extension throughsocial media. Journal of Extension. 2014;52(3):1-11.

16. Nejaddrezaei N, Allahyari MS, Sadeghzadeh M, Michailidis A, El Bilali H. Factors affecting adoption of pressurized irrigation technology among olive farmers in Northern Iran. Journal of Applied Water Science. 2018;8(109):1-9.

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