



Learning Capabilities of Extension Professionals Using Social Media Platforms in Southeast, Nigeria

<https://dx.doi.org/10.4314/jae.v29i3.13>

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Submitted: 27 May, 2025

First Request for Revision: 22 June, 2025

Revisions: 28, 30 June, 2025, 10, 13 July 2025

Accepted: 13 July 2025

Published: 18th July, 2025

Cite as: Udoye, C. E. and Madukwe, M. C. (2025). Learning capabilities of extension professionals in using social media platforms for service delivery in southeast, Nigeria. *Journal of Agricultural Extension* (29) 3, 134-143

Keywords: Learning capabilities of extension professionals, Use of social media.

Conflict of interest: The authors hereby declare that there is no conflict of interest

Acknowledgements: The authors wish to appreciate the members of staff of the ADP for their assistance during data collection.

Funding: This research received no specific grant from public, commercial, or not-for-profit funding agencies.

Authors' contributions:

UCE: Conception/design, development of data collection instrument, analysis, interpretation of data (60%)

MMC: Conceptualization, writing introduction, editing, supervision (40%)

Abstract

The study ascertained extension professionals' learning capabilities using social media platforms in Southeast, Nigeria. The population for the study comprised one hundred and twenty-seven extension professionals (academic staff of the Department of Agricultural Extension and extension agents). Data were collected using an online (Google Form) questionnaire and interview schedule. Data were analyzed using simple linear regression, percentages, and frequency scores, while others were presented using a chart. Results show that 100.0% of the academic staff indicated that social media platforms facilitate virtual training sessions. The Majority (94.9%) of the extension agents indicated that social media platforms enhance mentorship between extension professionals. More than half (58.6%) of the academic staff had high learning capability in using social media platforms for extension service delivery. Sex had a significant ($t = -2.812$) negative influence on the learning capabilities of extension agents, significant at $p \leq 0.05$. It is therefore recommended Government and donor agencies should prioritize regular capacity-building programs, with special focus on female extension agent's empowerment through tailored digital literacy trainings.

Introduction

There is no doubt that the agricultural sector in Nigeria has experienced various degrees of setbacks over the years due to reasons which include poor infrastructure and agricultural extension professionals' limited knowledge, skills, and expertise required to operate, use, or manage digital technologies effectively (Wasihun, 2022). This has consequently led to poor linkage between agricultural extension professionals and farmers thereby resulting in limited access to requisite agricultural information for farmers' use (Elliot & Ifeanyi-obi, 2024). Agricultural extension

professionals aid in increasing agricultural production through regular training and teaching of farmers on improved farm practices, provision of basic information and serving as intermediary between research institutes and farmers (Lwanga, 2025). Traditionally, extension services have relied on face-to-face interaction and conventional media, which were mainly funded by the government. The funding of extension services by the government in recent times has, however, reduced and the use of conventional teaching approaches by the professionals has not been effective due to a breakdown of information flow between the extension professionals and the farmers (Abdulwahab et al., 2023). In addition, Hama and Idrisa (2023) noted that the practice of traditional teaching methods (specifically face-to-face) are increasingly being challenged by factors including insecurity, limited logistics and infrastructure.

These challenges associated with the traditional face-to-face extension teaching method have thus intensified the need for agricultural extension professionals to embrace the use of social media platforms with their associated digital tools in extension service delivery. According to Sendur et al. (2020), social media applications have made significant changes in people's lives and thus have great potential to improve the flow of information among stakeholders in extension service. Social media platforms provide services that give users the opportunity to generate and share content online. It also allows users to manage relationships in communities online to achieve goals (Jamil et al., 2022). It is, however, pertinent to note that the use of social media platforms (e.g., WhatsApp, Facebook, X-formally Twitter) by extension professionals is a function of their learning capabilities in using the platforms.

Learning capability refers to the ability of personalities to acquire, process, and adapt new skills and knowledge effectively (Teo et al., 2022). It does not involve only the capacity to learn but also to apply, unlearn old practices, and constantly improve through practice and experience. Learning capability in using social media platforms in extension service delivery is, therefore, the ability of extension professionals to acquire the basic skills and knowledge of the features of various social media platforms to enable them to effectively use the digital platforms. Therefore, emphasis in this study is on what the extension professionals have learnt (knowledge) vis-à-vis the use of social media platforms for service delivery in the southeast of Nigeria.

Contemporary studies have shown that the learning capabilities of agricultural extension professionals in using social media platforms for extension service delivery remain less researched (Iwuchukwu et al., 2023; Olufunke et al., 2023; Alhassan et al., 2022). Udoe & Okoro (2024) assessed the technological capabilities of extension professionals; however, a holistic view of their learning capability in the use of social media platforms is limited. This gap highlights the need to investigate the learning capabilities of extension professionals in using social media platforms in Southeast Nigeria. Specifically, the study ascertained the learning capability of extension professionals in using social media platforms.

Hypotheses of the study

H₀₁: There is no significant relationship between the socioeconomic characteristics of academic staff and learning capability of academic staff in using social media platforms.

H₀₂: There is no significant relationship between socio-economic characteristics of extension agents and learning capability of extension agents in using social media platforms.

Methodology

The study was carried out in Southeast, Nigeria. Southeast Nigeria comprises of five states namely Abia, Anambra, Ebonyi, Enugu, and Imo States. The region is located between longitude 5°30' and 9°30'E and latitude 4°30' and 7°00'N occupying land mass of 75,488 km² with population of 22.3 million people (National Population Commission, 2020).

The population for the study comprised all extension professionals in southeast, Nigeria. Three States (Enugu, Imo, and Ebonyi States) out of the five states in the southeast were randomly selected. The federal universities (University of Nigeria, Nsukka (UNN), Federal University of Technology, Owerri (FUTO), and Alex Ekwueme Federal University, Ndufu-Alike (FUNAI)) and the Agricultural Development Programme (ADP) in the selected states were used.

Two categories of extension professionals, namely academic and extension agents from federal universities and ADPs were used, respectively. All the academic staff of the departments of agricultural extension in the universities, UNN (20), FUTO (20), and FUNAI (8) were used. This gave a total of 48 academic extension professionals for the study. However, responses from a total of twenty-nine (29) academic members of staff who completed an online survey after three reminders were used. They were UNN (13), FUTO (8), and FUNAI (8) giving a total of twenty-nine (29) academic staff for the study.

In the second category, a multi-stage sampling procedure was used in the selection of extension agents in each state. In the first stage, five (5) out of six (6) agricultural zones in Enugu State were purposively selected, while all zones in Ebonyi (3), and Imo States (3) were used. The purposive selection of the five zones in Enugu State was because of the availability of active extension agents in the zones, as revealed by the zonal extension managers. This gave a total of eleven (11) zones for the study. In the second stage, all the extension agents in the eleven agricultural zones were used. They were Ebonyi south (8), Ebonyi north (19), Ebonyi central (16) (Ebonyi State); Nsukka (10), Enugu Ezike (10), Awgu (2), Udi (1), Agbani (2) (Enugu State), and Owerri (19), Orlu (6), Okigwe (5) (Imo State). This gave a total of ninety-eight (98) extension agents and a grand total of one hundred and twenty-seven (127) extension professionals for the study. Data were collected from the academic staff using a structure online (Google form) questionnaire, while interview schedule was used to obtain information from extension agents.

To ascertain learning capability level of the respondents, they were asked to indicate from a list of fifteen learning capability questions. Responses were scored as yes = 1 and no = 0. Learning capability score for each of the two categories of staff was computed by summing the scores for each of the respondents, which was further categorized as “no learning capability” (0 score), “low learning capability” (1-5 score), “moderate learning capability” (6-10 score), and “high learning capability” (11 – 15 score).

Multiple linear regression was used to assess the influence of socio-economic characteristics of the academic members of staff and extension agents and learning capabilities of the two categories (academic staff and extension agent) of staff in using social media platforms. This was tested at 95% confidence level.

The regression equation was in the following form:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots \beta_6 X_6 + U$$

Where:

Y= Learning capabilities of academic staff and extension agents (Learning capability score for the two categories of staff)

$\beta_1 + \beta_5$ = Regression coefficient

X_1 = Sex (Male=1; female=0 [academic staff] and Female=1; male=0 [extension agents])

X_2 = Age (years)

X_3 = Marital status= (Married=1; not married=0)

X_4 = Number of years spent in formal education (years)

X_5 = Experience in extension service (years)

X_6 = Household size (number of people living together and eating from the same pot)

Results and Discussion

Learning Capability of Extension Professionals in Using Social Media

Table 1 shows that social media platforms enhance virtual training and facilitate two-way communication between extension professionals and clientele (100.0% each) among academic staff. Also, the majority (96.6%) of the respondents indicated that social media platforms were used to reach a larger audience for information-sharing. Similarly, 96.6% revealed that social media platform enables extension administrators to access training materials for self-learning. About 93.0% indicated that social media platforms support multimedia content such as Images and videos, which enhance knowledge-sharing. Another 93.1% indicated that use of social media ensures timely information dissemination to clientele, while 93.1% also indicated that it allows access to expert knowledge. The majority (89.7%) learnt that social media platforms enhance mentorship between extension professionals and 86.2% learnt that social media platforms are used to target specific audiences for service delivery.

Again, Table 1 shows that the majority (94.9%) of the extension agents indicated that social media platforms enhance mentorship between extension professionals, used to reach a larger audience for information-sharing (92.9%), enhances virtual training (90.8%), and facilitate two-way communication between extension professionals and clientele (90.8%). Also, extension agents indicate that social media platforms enhance knowledge-sharing (89.8%), reduces the need for physical meetings and travel (87.8%), used for backing up agricultural information for onward dissemination (87.8%), and enables extension administrators to access training materials for learning at their own pace (82.7%).

These results show that social media platforms have become an indispensable tool for agricultural extension professionals in the universities and ADP. This is supported by the finding of Muhammad et al. (2021) that social media platforms are instrumental for knowledge sharing between extension professionals. These platforms not only improve the learning capabilities of these professionals through access to multimedia content, resources, and mentorship but also enhance the effectiveness and efficiency of service delivery. The high percentage recorded across various indicators show widespread use.

Also, the findings imply that farmers in the area are likely to be timely informed about the latest agricultural practices since their agricultural extension contacts can easily reach out to them with solutions to their immediate problems without delay using social media platforms. This is supported by finding of Nyarko and Kozari, (2021) that use of social media platforms by extension professionals enhances timely information dissemination to farmers.

Table 1: Learning capability of extension professionals in using social media platforms

Learning capability variables	Academic staff of departments of agricultural extension	Extension agents
	%	%
Facilitates virtual training sessions	100	90.8
Enhances mentorship between extension professionals	89.7	94.9
Facilitate two-way communication between extension professionals and clientele	100	90.8
Target specific audiences for service delivery	86.2	83.7
Reach a larger audience for information-sharing	96.6	92.9
Support images and videos, which enhance knowledge-sharing	93.1	89.8
Ensures timely information dissemination to the clientele	93.1	80.6
Ensures access to expert knowledge	93.1	81.4
Ensures access training materials for self-learning	96.6	82.7
Backing up agricultural information for onward dissemination	93.1	87.8
Exchange documented agricultural information as Microsoft Word documents	51.7	58.2
Gives room for one-on-one interaction with clients via voice note	55.2	58.2
It can be used for live video calls with clientele	37.9	75.5
Reduces the need for physical meetings and travel	51.7	87.8

Source: Field survey, 2025

Extension Professionals' Learning Capability in Using the Social Media Platforms

Figure 1 shows that a greater proportion (58.6%) of the academic staff had high learning capability in using social media platforms for extension service delivery and 41.4% had moderate learning capability. On the other hand, the Figure shows that the majority (74.5%) of the extension agents had high learning capability in using social media platforms for service delivery, 20.4% had moderate learning capability, while 5.1% had low learning capability (Figure 1).

The finding reveals that most of the extension professionals had high learning capability in using social media platforms in service delivery. This result suggests that most of the extension professionals have high knowledge in the use of social media for service delivery and thus are more likely to effectively reach out to more farmers at reduced cost. This aligns with the finding O'Dea (2020) that the knowledge of use of social media platforms by extension personnel facilitates

agricultural information dissemination to remote and rural areas through mobile phones and other internet enabled platforms and digital tools.

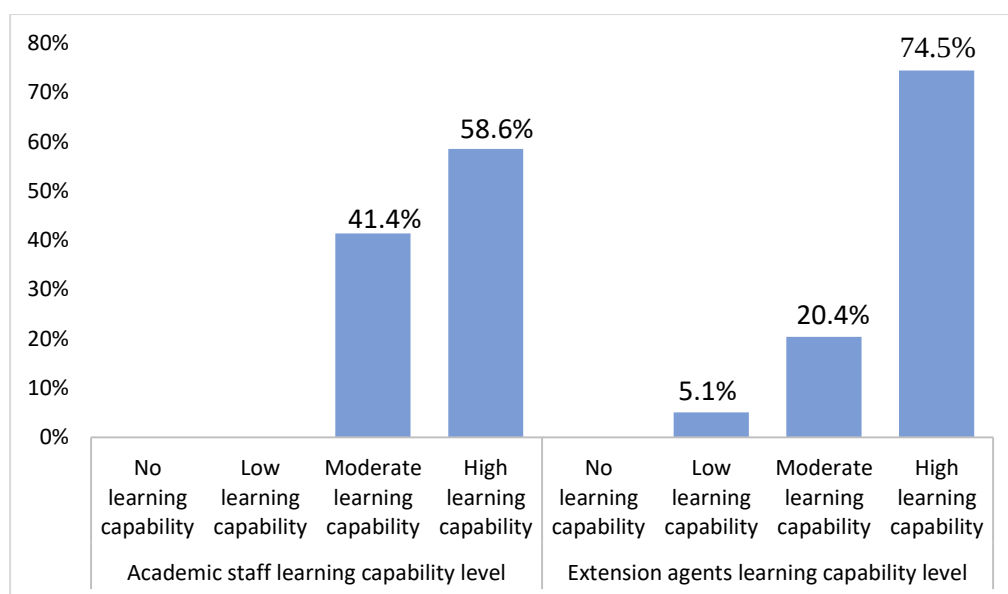


Figure 1: Extension professionals' learning capability level in using social media platforms

Relationship between Socioeconomic Characteristics of Academic Staff and Learning Capability in Using Social Media Platforms

Table 2 shows that sex ($t=0.547$), age ($t= -0.299$), marital status ($t= -1.154$), no of years in school ($t=0.034$), years of experience in extension service ($t=0.130$) and household size ($t= -0.533$; $p=0.599$) had no significant influence on learning capabilities. This means that a change in any of the predictor variables will not influence the learning capabilities of the academic staff vis-à-vis usage of social media platforms.

Table 2: Relationship between socioeconomic characteristics of academic staff and learning capability using social media platforms

	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	t
(Constant)	16.023	4.112		3.897
Sex	0.563	1.030	0.120	0.547
Age	-0.024	0.082	-0.083	-0.299
Marital status	-3.171	2.748	-0.254	-1.154
No of years in school	0.003	0.086	0.007	0.034
Years of experience in extension service	0.010	0.078	0.033	0.130
Household size	-0.138	0.260	-0.115	-0.533

R= 0.338; R²= 0.114; Adjusted R²= -0.127; P≤0.05

Overall p=0.821

Source: Field survey, 2025

Relationship between Socio-Economic Characteristics of Extension Agents and Learning Capability Using Social Media Platforms

Table 3 shows that sex (being female) had a significant ($t = -2.812$) negative relationship on learning capabilities of extension agents. This means that being female extension agents is associated with lower capabilities in using social media platforms. This could be because gender roles often assign women more household and caregiving responsibilities, thereby reducing the energy and time available to them for professional development. Also, a male-dominated workplace sometimes can create an unwelcoming or less supportive environment for female extension agents, affecting their motivation and ability to learn. Other predictor variables including age ($t = -0.726$), marital status ($t = -0.804$), years spent in school ($t = -0.962$), years of experience in extension service ($t = 1.544$) and household size ($t = 0.842$) had no significant influence on the learning capability of extension agents. The constant with p-value of 0.000 signifies that there is a strong, reliable baseline level of learning capabilities of the extension agents even if all the predictor variables have no effect.

Table 3: Relationship between socio-economic characteristics of extension agents and learning capability using social media platforms

	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	t
(Constant)	15.163	3.060		4.954*
Sex	-1.685	0.599	-0.281	-2.812*
Age	-0.041	0.057	-0.076	-0.726
Marital status	-1.108	1.378	-0.086	-0.804
Years spent in school	-0.086	0.090	-0.098	-0.962
Years of experience in extension service	0.061	0.039	0.167	1.544
Household size	0.119	0.141	0.091	0.842

R= 0.363; R²= 0.132; Adjusted R²= 0.075; *P≤0.05

Overall p=0.040

Source: Field survey, 2025

Conclusion and Recommendations

The majority of extension professionals had high learning capability in using the platforms, revealing more efficient and effective service delivery to farmers. A significant gender disparity was revealed, with female extension agents having lower capability. Government and donor agencies should prioritize regular capacity building programs, with special focus on female extension agents' empowerment through tailored training in digital literacy

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