



PERCEPTION OF AGRICULTURAL EXTENSION WORKERS IN USING WEB TOOLS FOR DISSEMINATING INFORMATION IN SOUTH WEST NIGERIA

¹Daodu, T. O., ¹Henshaw, E. E., ¹Okoro, N. O., ²Ologunagba, O., ¹Ajiboye, I. O.,
³Adara, C. T. and ⁴Uyamasi, I. M.

¹Department of Agricultural Development and Management,
Agricultural and Rural Management Training Institute, Ilorin Kwara State.

²Department of Agricultural Extension and rural Development,
Faculty of Agriculture, Federal University Oye Ekiti, Ekiti State.

³Department of Agricultural Economics and Extension, Faculty of Agriculture,
Federal University Oye Ekiti, Ekiti State.

⁴Department of Agricultural Extension and Rural Development,
Faculty of Agriculture, University of Ibadan

Corresponding Author's Email: ireneuyamasi@gmail.com, **GSM:** 08062846211

ABSTRACT

The examined the perception of agricultural extension workers in using web tools for the disseminating information in southwest Nigeria. The study therefore tried to describe the socioeconomic characteristics of Agricultural extension workers, their usage of web tools in accessing agricultural information and Perception of the usage of web tools in disseminating agricultural information. A multi-stage sampling technique was used in selecting two hundred and forty-five (245) Agricultural extension workers. Primary data were collected using structured questionnaire and analyzed using descriptive analysis. Result of analysis showed that 69.5% of the extension workers were male, a high percentage (93.4%) of them were married, having their mean age as 47 years, with more than 16 years of educational qualification and work experience while their annual income was approximately ₦1,432,280.00. The findings further found out that the Agricultural extension workers had positive perception towards web tools usage, with all perception statements having mean values greater than 2.5. Similarly, facebook (Mean = 2.17) ranked 1st, Google plus (Mean = 2.11) ranked 2nd and WhatsApp (Mean = 2.03) ranked 3rd with a mean greater than the set threshold of greater than 2.00 were the only web tools that had high usage among agricultural extension workers in the study area. The finding concludes that the extension workers have a positive perception towards the use of web tools in disseminating agricultural information. The study therefore recommends that web tools should be designed in a user-friendly manner by key players in ICT while also training the farmers in needed areas by extension agents.

Keywords: Usage, Information, Agricultural, Extension, Productivity

INTRODUCTION

Use of technologies in all sectors of professionalism in achieving greater output is gradually gaining ground in which the agricultural sector is not left out. Given the growing complexity of modern agriculture, particularly in information dissemination, agricultural extension workers need access to a reliable source of information that addresses their unique needs and challenges. These includes data on soil conditions, weather patterns, pest and disease outbreaks, and the latest agricultural technologies. This is in line with Mapiye, et al (2023) who asserted that the effective use of Information and Communication Technologies (ICTs) in improving accessibility to appropriate agricultural information and services presents substantial prospects for transforming the productivity and livelihoods of the farmers. In other to access reliable source of information, web tools such as whatsapp, twitter, facebook, zoom and others is the contemporary paradigm for raising agricultural output globally.

Past research has indicated that information communication routes in Nigeria, such as extension institutions, have several issues (Apata, 2019). The few extension officers exclusively work



in metropolitan regions, ignoring rural areas. Frontline extension agents are important because they have direct interaction with agricultural technology end-users.

Rapid social media development may be used as a learning resource and agricultural information media to address farmers' difficulties. This Muslihat *et al.* (2015) asserted that the community's media consumption affects the extension's competence. The more extension agencies utilize media, the more they know and can help farmers. Some individuals may exchange ideas, cooperate to make inventions, sights, and arguments, and discover wonderful friends or partners and develop a community using social networking (Nasrullah, 2017).

Despite the promise of web tools to facilitate knowledge generation, sharing, and collaboration, little is known about designing and uses in Nigeria for extension delivery. These effects are most noticeable in the areas of information sharing, adaptation to and mitigation of climate change, etc. Studies on the topic have also shown that extension workers' reluctance to use these webtools can limit their adoption inspite of the demonstrated boost in agricultural productivity brought about by usage of web tools (Fuglie, *et al.*, 2020; Jellason, *et al.*, 2020).

With little information about studies being carried out in southwest on extension workers' perceptions about the usage of web tools for information dissemination, there is therefore the need for assessment of such. The specific objectives were to:

- i. describe the socioeconomic characteristics of the agricultural extension workers' in the study area;
- ii. identify the level of usage of web tools among agricultural extension workers' in the study area;
- iii. assess the perception of the usage of web tools in disseminating agricultural information among agricultural extension workers'

METHODOLOGY

Study Area

The study area used for the study were Ekiti, Osun and Oyo States. Ekiti state lies within the tropics, located between latitude 7° 15' to 8° 5' North of the equator and Longitude 4° 45' to 5° 45' East of the Greenwich meridian. Ekiti is basically an agrarian state with a land area of about 5,307 square kilometers of which over 90% is available for farming and agricultural related enterprises. Equally, the state is endowed with favourable agro climatic conditions suitable for agricultural productions of tree crops such as oil palm, citrus, mango, kola nut and guava and arable crops such as maize, rice, plantain, tomato, okro, melon and water melon. Ekiti State has about 70% of her population engaged in farming (NAERLS and NPAFS 2010). The state is bounded in the North by Kwara and Kogi States, in the West by Osun State. It is bounded in the East and South by Ondo State.

Osun state is located in the south-western part of Nigeria which has the incidence of poverty of 19.5% and 80.5% for food poor and non-poor, respectively (NBS, 2010). It covers a total area of approximately 14,875 km² while the land area is about 9,251 km². Osun state is agrarian state with large production of tuber crops which is associated with soil area that is deep and well drained sandy loam (Afolami *et al.*, 2015). Agriculture is the traditional occupation of the people of Osun State.

Oyo State is bordered to the north by Kwara State, to the east by Osun State, and to the southwest by Ogun State and the Republic of Benin. The state economy remains largely agrarian with Cassava, cocoa, and tobacco dominating the crops and poultry birds dominating the animal production section of the economy.

Sampling Technique and Sample Size

A multi-stage sampling technique was used to select extension workers for the study. In the first stage, three (3) states were randomly selected from South- West Nigeria (Oyo, Ekiti and Osun States). The second stage involved purposive selection of all Agricultural Development Projects (ADPs) from each of the selected states. The third stage involved purposive selection of sixty percentage of all the extension workers that were available in the study areas, which is 245 extension workers in which Ekiti was (60), Osun (65) and Oyo (120). The fourth stage involved purposive selection of three zones in each of all the extension workers located.



Data Collection

Data was collected from both primary and secondary sources. Structured interview schedule was used to elicit primary data while secondary data was obtained from the state ADP office, relevant journals, textbooks and the internet.

Data Analysis

Data was analyzed with the use of descriptive statistics. Descriptive analytical tools such as frequency counts, mean and percentages were used to analyze the variables.

RESULT AND DISCUSSION

Socio-economic Characteristics of Agricultural Extension Workers

The results in Table 1 showed that 69.5% of the extension workers in the study were males while female constituted only 30.5%. The findings reveal that extension organization in the study area is dominated by male. The implication of this finding is that extension workers might find it difficult to access women in area where culture limits the interaction of men and women and if the few women extension workers are to be used to access their women farmers and rural dwellers, they might be overwhelmed with such responsibilities since women constitutes between 60 and 80% of the agricultural labour force in Sub-Saharan Africa and in Nigeria, they contribute as high as over 50% (Gebre *et al.*, 2020). Therefore, having few extension workers as women may be a barrier to having regular contacts with women as extension clientele, especially in areas where there is a cultural barrier to interacting with opposite sex. The results further reveals that the mean age of the extension workers was approximately 47 years and less than 1% (0.7%) were less than 30 years old while 33.1% and 64.2% were between 30 and 44 years and 45 and 59 years, respectively and only 2.0% of the extension workers were 60 years and above. This indicates that extension workers in the study area were in their active age. This implies that they can be able to adopt and use any form technology in disseminating agricultural information. In addition, more than half (55.0%) of the extension workers had between 12 and 16 years of schooling, while 2.6% of the extension workers had less than 12 years of formal education. Similarly, the educational qualification of the extension workers in the study area revealed that majority (61.6%) of them had bachelor or Higher National Diploma while 33.1% had Masters degrees with only 5.3% indicating that they had either National Certificate in Education or Ordinary National Diploma. This signifies that they could leverage on their level of education to optimally make use of web tools in accessing information.

The study also showed that most of the agricultural extension workers were married (93.4%) while very inconsequential proportions (0.7%, 2.6%, 1.3% and 2.0%) showed that they were single, divorced, separated and widowed, respectively. The fact that most of the agricultural extension workers were married may be used to proxy their commitment to extension works as marital status had been documented by extant literature such as Kemunto, *et al.* (2018), Darko-Asumadu *et al.* (2018) that marital status had an influence on job satisfaction where the married were much happier in their jobs than the single. This shows that being married may positively influence commitment and involvement in extension works. The finding shows that agricultural extension workers in the study area had moderate household size of about 6. The findings conform with the studies of Ogunwande *et al.* (2018) and Okwukenye and Okoedo-Okojie (2014) which reported that agricultural extension workers in Nigeria had between low to moderate family size as compared to most farmers. Results of analysis also shows that the mean annual income of agricultural extension workers in Nigeria based on the selected sample was approximately ₦1,432,280.00. This shows that on average, an extension worker receives about ₦119, 356.66 per month as salary. This is in conformity with the salary structure of civil servant in Nigeria where the minimum wage is pegged at ₦30,000 for a level one officer without educational attainment. On the experience with the number of years spent on the job, results show that on average, extension workers in the study area had spent about 13 years on the job. Specifically, 27.2% indicated less than 10 years of experience, 58.9% showed that they had spent between 10 and 19 years while 13.9% had spent 20 years and above as agricultural extension workers in the study area. This shows that agricultural extension workers had reasonable experience in



carrying out extension works and as such they would have been exposed to training on the use of web-based tools in the discharge of their duties as information experts. This study conforms with the assertions of Okwuokenye and Okoedo-Okojie (2014) who reported over 17 years of experience for the extension workers in Delta State, Nigeria while Davis *et al.* (2019) reported 15 years as the average years of experience among extension workers in Nigeria

Table 1: Distribution of Respondents based on Socio-economic characteristics of extension workers

Variables Deviation	Freq.	Percentage	Mean	Std. Dev.
Sex				
Male	105	69.5		
Female	46	30.5		
Age (years)				
<30.00	1	0.7		
30.00 - 44.00	50	33.1	47.25	6.32
45.00 - 59.00	97	64.2		
60.00+	3	2		
Years of formal schooling				
<12.00	4	2.6		
12.00 - 16.00	83	55	16.81	2.78
17.00+	64	42.4		
Highest Educational qualification				
Secondary school				
NCE/ND	8	5.3		
BSc/HND	93	61.6		
M.Sc	50	33.1		
Ph.D				
Attend any professional training	57	37.7		
Marital status				
Single	1	0.7		
Married	141	93.4		
Divorced	4	2.6		
Separated	2	1.3		
Widowed	3	2		
Household size				
<5.00	19	12.6		
5.00 - 9.00	122	80.8	6.13	2.17
10.00+	10	6.6		
Average income per annum (₦)				
<1000000.00	125	82.8		
1000000.00 - 1499999.00	10	6.7	1432280.00	372091.07
1500000.00+	16	10.6		
Experience (Years)				
<10.00	41	27.2		
10.00 - 19.00	89	58.9	12.64	6.10
20.00+	21	13.9		

Source: Field Survey, 2025.

Usage of Web Tools by Agricultural Extension Workers

Results in Table 2 showed that facebook (Mean = 2.17) ranked 1st, Google plus (Mean = 2.11) ranked 2nd and WhatsApp (Mean = 2.03) ranked 3rd with a mean greater than the set threshold of



greater than 2.00 were the only web tools that had high usage among agricultural extension workers in the study area. Usually, understanding the mode of operations of these web tools is very critical to usage. The level of usage seems low and this may not translate to low awareness as Oyakhilomen *et al.* (2020) and Umar *et al.* (2015) pointed out that awareness of a technology may not lead to usage as factors that promote usage are different from those that support awareness, although awareness is a critical and the first stage in the adoption process as documented by Rogers (1962) in the diffusion of innovation. The low level of usage of the agricultural extension agents may be due to many factors such as availability, accessibility, relative advantage and cost as opined by Akintonde *et al.* (2021) in their study. Currently, many web tools are being utilised for social networking and professional engagement but the factors underling their usage differ and knowledge of the web tools also depend on the environment and age of the users.



Table 2: Distribution of Respondents based on Usage of Web Tools

Ext. Workers			
Usage	Mean	Std. Dev	Rank
Facebook	2.17*	0.81	1 st
Google plus	2.11*	0.99	2 nd
WhatsApp	2.03*	0.95	3 rd
Skype	1.99	0.98	4 th
Twitter	1.99	0.98	4 th
YouTube	1.91	0.88	7 th
Zoom	1.97	1.36	5 th
Twitter	1.99	0.96	4 th
Instagram	1.93	0.77	6 th
Soundation	1.76	1.03	8 th
Telegram	1.75	0.95	9 th

Source: Field Survey, 2025.

Mean > 2.0 = High Usage



Agricultural Extension Workers Perception on the Usage of Web Tools in Disseminating Agricultural Information

Results in table 3 show the agricultural extension workers' perception of the various web-based tools in which the extension workers had positive perception towards all the perceptual statements in which their mean values were greater than the mean threshold of 2.5 drafted for this study. Among the perceptual statements were "the web tools make work more interesting" (Mean=3.19) ranked 1st. This implies that the extension workers will have a positive disposition towards carrying out their duties. Learning to operate web tools will be easy for me (Mean=3.09) ranked 2nd. This positive perception is expected owing to their high level of educational qualification.

Web tools can be used to circulate innovation easily (Mean=3.07) ranked 3rd. This result corroborates the findings by Alabi, et al (2021) who asserted that ICT, if efficiently used can provide quick access to ideas and experience from wide range of people, communities and cultures. Web tools remove a lot of cost, barriers and save time (Mean=2.97) ranked 4th, the use of web tools is a source of motivation to both extension workers and farmers thereby promoting learning (Mean=2.96) ranked 5th. This can be inferred from the initial perception about web tool being interesting to use.

Web tools usage involved network which may be difficult to find (Mean=2.92) ranked 6th, having tendency to increase extension agents productivity (Mean = 2.89) ranked 7th, increase chances of getting expose to information and innovations (Mean = 2.86) ranked 8th and the usefulness of web tools to cover large number of farmers (Mean = 2.74) ranked 9th among others.

The positive perception observed toward the usage of web tools among agricultural extension workers may be a good step toward adoption and usage of other conditions for use are friendly. Making inference from the study of Osondu and Ibezim (2015) that reported clear and positive perception towards the use of information and telecommunication technologies which web-based tools are component. With the positive perception towards the use of web-based tools by the extension workers, it will be easier for the agricultural extension workers to search for information concerning the web-based tools in order to perform their tasks effectively and efficiently as extension workers.



Table 3 Distribution of Respondents based on Perception on the Usage of Web Tools for Information Dissemination

Perception in the usage of web tools	Ext. Workers		Rank	Rank
	Mean	Std. Dev		
Using Web tools to disseminate information to farmers help to cover large number of farmers	2.74*	1.08	13 th	8 th
Using web tools will increase my productivity in carrying out my extension work	2.86*	1.07	10 th	14 th
Usage of web tools will increase my chances of getting exposed to information on new innovations or technologies	2.87*	1.01	9 th	10 th
Use of web tool will increase interaction between extension agent and farmers	2.77*	1.1	12 th	12 th
It will be easy for me to become skillful at using web tools	2.91*	1.01	7 th	11 th
The cost of using web tools is high	2.91*	0.92	7 th	8 th
It uses electricity which at time may not be available	2.89*	0.97	8 th	6 th
Using Web tools reduce interpersonal communication between the extension agents and farmers	2.66*	0.99	14 th	1 st
Web tools involve training on the usage	2.89*	0.95	8 th	2 nd
Web tools usage involved network which may be difficult to find.	2.92*	0.98	6 th	3 rd
Learning to operate web tools will be easy for me	3.09*	0.88	2 nd	5 th
Web tools make work more interesting	3.19*	0.84	1 st	9 th
web tools can be used to circulate innovations easily	3.07*	0.95	3 rd	4 th
The use of web tool is a source of motivation to both the extension agents and the farmers thereby promoting learning	2.96*	0.99	5 th	2 nd
Getting relevant materials for learning purpose cannot be achieved via Internet	2.74*	0.96	13 th	9 th
Web tools use influences rate of adoption	2.79*	0.94	11 th	7 th
Web tools removes a lot of cost, barriers and saves time	2.97*	0.86	4 th	13 th
Extension work can be greatly enhanced by web tools	2.87*	0.91	9 th	15 th
Web tools is a cost effective and practical tool for facilitating extension service delivery	2.87*	0.86	9 th	16 th
The benefits of web tools use outweigh the financial burden involved	2.65*	0.95	15 th	17 th

Source: Field Survey, 2025.

Mean > 2.5 = Positive

CONCLUSION AND RECOMMENDATIONS

The flow of information is fast becoming easier with the aid of web tools usage, which is a sign of better livelihood. Emanating from the findings, the study concluded that extension workers in the study area have positive perception towards the usage of web tools in disseminating agricultural information to farmers. The commonly used web tools by the extension workers were facebook, google plus and whatsapp. Despite being aware of the benefits of web tools, Agricultural extension



workers are concerned that technology would push local knowledge to the margins. A number of factors are responsible for how agricultural extension workers view the web tools for agricultural methods; if disregarded, these factors could impede Nigeria's agricultural system's successful usage of web tools. To enhance agricultural extension workers' perceptions, the government should increase awareness about the use of web tools instruments in the information disseminations by extension agent. Key players in the design of web tools process, particularly web tools network service providers, should enable design of web friendly tools for easy understanding and usage.

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