

Effect of Social Media in Enhancing Agricultural Extension Services among Farmers in Gwagwalada Area Council, Abuja, Nigeria

Olorunniyi A. Abraham^{1*}, Ezinne E. Merianchris², Osiboye O. Oludare³, Sennuga S. Olayemi¹ and Barnabas Tena Mongalaku¹

¹Department of Agricultural Extension and Rural Sociology, Faculty of Agriculture, University of Abuja, Nigeria.

²Center for Agroecology, Water and Resilience, Coventry University, Coventry, United Kingdom.

³School of Science, Tai Solarin College of Education, Omu-Ijebu, Ogun State, Nigeria.

The study examined how social media may help farmers in Gwagwalada Area Council, Abuja, improve their agricultural extension services. The research was carried out in the Tunga-maje and Paiko kore communities of Abuja's Gwagwalada Area Council. A descriptive research design was used in this study. The communities for the study were chosen using a targeted sampling technique. The study had an 80-farmer sample size. It is made up of 40 farmers from each village (Tunga- maje and Paiko kore). Farm families were invited to participate in the study through community meetings, in which 40 farming homes were selected at random from each village; participation was mostly voluntary. Tunga-maje and Paiko kore were randomly sampled for their closeness of the office of Agricultural Development Project (ADP) and the University of Abuja. The study reveals that 93.8% of the respondents, often used the social media to seek information from extension officers and also share among their fellow colleagues. Findings revealed that 91.3% of the respondents feel safe by having a phone because they can easily reach out to receive and pass information across via mobile phone. This study concludes that there is a need for governments to institute an e-library/information hub where farmers can access information; Policy makers should set policies that can help service providers design a subsidized phone with online and offline extension application for farmers. Social media platforms should be stationed by agricultural extension workers as part of their communication master plan in promoting farmers' participation.

Keywords: Social media, Technology, Information, Farmers, Agriculture, Extension.

Author's Affiliation

*Corresponding author. E-mail: abrahamolorunniyi@gmail.com

Article History

Received: 13th April 2022

Accepted: 19th May 2022

Published: 1st June 2022

Cite Article:

Olorunniyi, A. A., Ezinne, M. E., Osiboye, O. O., Sennuga, S. O. & Barnabas, T. M. (2022). Effect of Social Media in Enhancing Agricultural Extension services among Farmers in Gwagwalada Area Council, Abuja, Nigeria. *Journal of Research in Science and Technology*, 3(4), 24-32.

INTRODUCTION

All and sundry are living in the world of information and technology hence information has become the bedrock of every health, agriculture, commerce, business, and education are just a few examples (Adeyongo et al., 2022). Information and technology

have become one of the key driving mechanisms utilized by extension workers in agricultural information distribution to farmers (Sennuga, 2019; Ebisike et al., 2021). Information is a crucial component in the establishment and maintenance of human relationships, not only in developed countries but across the globe (Sennuga et al., 2020a). Over the years, a breakdown in communication has been blamed for difficulties that have arisen between countries around the world. Hence, the importance of information in modern society cannot be over emphasized, particularly in the process of development, both in agricultural and rural development. This makes it crucial to provide ample, relevant and contemporary information to metamorphose agricultural production in many emergent nations, Nigeria inclusive.

Agricultural data is crucial for increasing agricultural output, reducing poverty, and minimizing rural-urban migration among rural youth. Fadiji and Sennuga (2020) opined that the emergence of the information economy as a global phenomenon that organizes production, conscious utilization of information, and effective and efficient deployment of information is increasingly becoming the basis for creativity, productivity, and profitability, in recognition of the importance of information in technology transfer. As a result, if the target segment of a population gets access to readily available and usable knowledge, their lives will presumably improve. This vacuum must be filled by looking into various choices for agricultural extension service delivery mechanisms. Information and Communication Technology (ICT) can give agricultural extension information that is more precise, timely, relevant and accurate (Sennuga, 2019). Agriculture's ICT-based tools Web portals, Tele centers, mobile telephony, and hybrid projects (ICT with classic extension aspects) are only some of the options (Shantichandra et al., 2013). In India, the mass media, including the Internet, has surpassed television as the second most important source of helpful information for agricultural families (NSSO, 2014). Furthermore, social media has a lot of potential for usage as a tool for communication and networking in the farming community. These innovations are renewing agricultural expansion and consulting services all around the world (Sennuga, 2019).

Since the inception of the internet, social media has evolved. From the first email in 1971 to Usenet in 1979 to Geo Cities in 1995, this allowed everyone to create their own site. Six Degree, on the other hand, is largely regarded as the first social network (Kaplan and Heinlein, 2020; Fadiji and Sennuga, 2020). Social networking sites based on the "social-circles network paradigm" came in sixth place. Friendster was launched in 2002 and had over 100 million users at its peak. Myspace was the leading social networking site in the world from 2005 to 2008, and it surpassed Google as the most visited website in the United States in June 2006. Since May 2008, when Facebook toppled Myspace,

the network has been playing catch-up and attempting to reinvent itself. According to Andress and Woodard (2013), social media refers to a website and applications that enables users to create and send messages (video and audio), share content or to participate in social networking (Omabuwa et al., 2022). However, farmers' lack of usage of social media is the reason for major issues such as lack of awareness, illiteracy, and lack of training. Lack of resources, limited awareness of better agricultural technologies, illiteracy among farmers, and communication issues were the top challenges cited by extension agents when offering technical assistance to farmers. Though, social media in agricultural extension is still in its infancy, and much of its potential has yet to be fulfilled. It is worthy of note that;

- i. Social media is an important marketing resource for farmers to use to connect to their customers and create a community which brings their farm to the public eye and ultimately leads to a more successful business.
- ii. Technology in agriculture affects many areas of agriculture, such as fertilizers, pesticides, seed technology etc. Biotechnology and genetic engineering have resulted in pest resistance and increased crop yields. Mechanization has led to efficient tilling, harvesting, and a reduction in manual labor.

It is on the backdrop of this that the study attempts to find out the impact of social media in enhancing Agricultural Extension among farmers in Gwagwalada Area Council, Abuja. The specific objectives of the study are to:

- i. describe the socio-economic characteristics of the farmers in the study area;
- ii. examine the level of participation in the use of social media in agricultural extension practices;
- iii. assess the importance of social media in modern Agricultural Extension practice;
- iv. highlight the constraints faced with the use of social media in enhancing agricultural extension services.

MATERIALS AND METHOD

The research was carried out in Nigeria's Federal Capital Territory's Gwagwalada Area Council. Gwagwalada is the largest city in the Local Government Area, which covers 1,043 km² and with current population of 157,770 people. Due to the active engagement of rural farmers in agricultural production and their proximity to the University of Abuja, which is easily accessible to the researcher, two rural communities (Tunga-maje and Paiko kore communities) were purposefully selected for the study. Farming is the primary activity and occupation of the community's rural residents. Major food crops grown in the area are rice,

maize, yam, melon and some of the dwellers engage in animal production.

Population of the Study and Research Design

The research involves two rural farmers communities (Tunga-maje and Paiko kore), which are comparable in climate, religious beliefs, and cultural practices. Extension agents are available in both communities. The study employed descriptive research design (Gillis and Jackson, 2002; Yin, 2003) in order to traverse and procure rigorous information connected to the impact of social media in enhancing Agricultural Extension among farmers in their actual situation.

Sampling Techniques and Sample Size

Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje, and Kwali are the six Area Councils that make up the Federal Capital Territory. The total land area covered by these six councils is roughly 7,290 km². All of the area councils have an equal chance of being chosen, however Tungamaje and Paiko kore from Gwagwalada Area Council were chosen at random because of their proximity to the Agricultural Development Project (ADP) and the University of Abuja. Another reason was their long-standing agricultural practice and the presence of adoption technologies that had been observed through time. Extension services are provided to both communities. The study had an 80-farmer sample size. Each community is represented by 40 farmers. Farm families were invited to participate in the study through community meetings, in which 40 farming homes were selected at random from each village; participation was mostly voluntary. Age between 20 and 70 years, farming experience, interest in participating, and being a permanent resident of the community were the other requirements for individual performance.

Data Collection

Primary data were collected by administering a structured questionnaire, well organized interview was scheduled to get extensive data. The researcher briefed the farmers with the assistance of the extension officer present on the importance of communication with the tool of social media and how important it is to get information; a pretest was conducted to validate the questionnaire and some minor corrections were made before administering the questionnaire. The survey took 35 minutes per questionnaire. The survey's main themes were the farmers' socioeconomic characteristics, household size, and level of awareness of using social media to receive agricultural extension services.

Data Analysis

The Statistical Package for Social Sciences (SPSS) software was used to code the data. The data was evaluated, and the

results were presented using descriptive statistics.

RESULTS AND DISCUSSION

Table 1 shows the results of the socioeconomic characteristics of the respondents. Age, gender, marital status, household size, academic qualification, and farming experience are among the variables explored in the study region. The farmers in the home ranged in age from 20 to 70 years old. In both communities, 62.5% of them were between the ages of 31 and 50. This indicates that the majority of the respondents were of working age, which increased their output in order to secure food security (Table 1). The oldest age group, 51-70, had the smallest impact on agricultural activity, with only 7.5% of the studied population contributing to active farming. This indicates that the majority of farmers who took part in the poll (62.5%) are still in their active years, with the ability to develop more farmland and experiment with new agricultural techniques. Younger people, on the other hand, are often thought to be more productive than their older counterparts. In the same vein, the results in Table 1 show that 56.3% of all respondents were male and 43.7 % were female. In terms of marital status, the majority of respondents (68.8%) were married, with an average family size of ten individuals, accounting for 43.8 % of the community.

Educationally, 36.1% of the respondents have not received a formal education, while 26.3% has acquired both primary and secondary education. Only 11.3% of the respondent possessed higher education (Table 1). In terms of farming experience 61.0% of the respondents have above 6 to 10 years of farming experience while 18.8% possess 5 years of farming experience. This suggests that the farmers will need frequent extension services and information on better innovations to enhance their farm practice. It is crystal clear that the promptness of information reaching the farmer is as important as the information itself (Sennuga et al., 2020).

Mobile Phone access was investigated in Figure 1. About 91.3% of the respondents have a phone, while 8.7% do not have a phone. Figure 2 reveals that an overwhelming majority (93.8%) of the respondents subscribe to a least a social media platform; This shows a positive significance that the farmers were exposed to telecommunication, this correlates with the findings of (Lai-Solarin et al., 2021; Oyewole and Sennuga, 2020) therefore, they are more likely to adopt the use of social media to receive extension services.

Finding in Figure 2 revealed that 42.5% of the respondents have been using mobile phones for more than 6 years. This shows that the farmers will be acquainted with the functions of a phone and will be exposed to using social media.

Table 1. Demographic representation of the socio-economic Characteristics of the farmers.

Variables	Percentage
Gender	
Male	56.3
Female	43.7
Age (Years)	
20-30	30.0
31-40	37.5
41-50	25.0
51-60	5.0
61-70	2.5
Marital Status	
Single	20.0
Married	68.8
Widowed	7.5
Divorced	1.3
Separated	2.4
House hold size	
1-5	42.5
6-10	43.8
11-15	10.0
16-20	3.7
Academic Qualification	
Non-Formal	36.1
Primary	26.3
Secondary	26.3
Tertiary	11.3
Farming Experience	
1-5	18.8
6-10	61.0
11-15	11.2
16-20	9.0

Source: Field survey, 2021

The finding in Figure 3 reveals that Facebook had 52.5%, WhatsApp 91.3% while Skype and Instagram had 98.8% adoption, while 33.8% browse through YouTube. Snap chat, Tiktok, Zoom recorded low patronage (Figure 3). Therefore, the study infer that Instagram and Skype are mostly used by the respondents to source for information from extension agents, perhaps because its video ability to reach out to a large number of farmers at the same time. This finding gives credence to that of Sennuga (2019) who asserted that rapid communication, plus increased access to social media in the home, at work, in educational establishments and even in agriculture, could mean that learning becomes a truly lifelong activity which deliver at a worldwide broadcasting capacity, a medium for interaction between individuals and a market place for goods and services.

Findings in Figure 4 show that 33.8% of the respondents receive extension service via their social media platforms daily while 40% receives information from extension agents weekly. This shows that proper awareness of the tool of social media can further enhance agricultural extension service with such platforms like Zoom, Skype, YouTube where information can be passed and sourced without physical presence of extension agents, yet having the requisite information handy in their comfort zone.

Level of Participation in the Use of Social Media in Agricultural Extension Practices

This is corroborated by the study of Adeyongo et al. (2022) who affirm that social media focus on building online

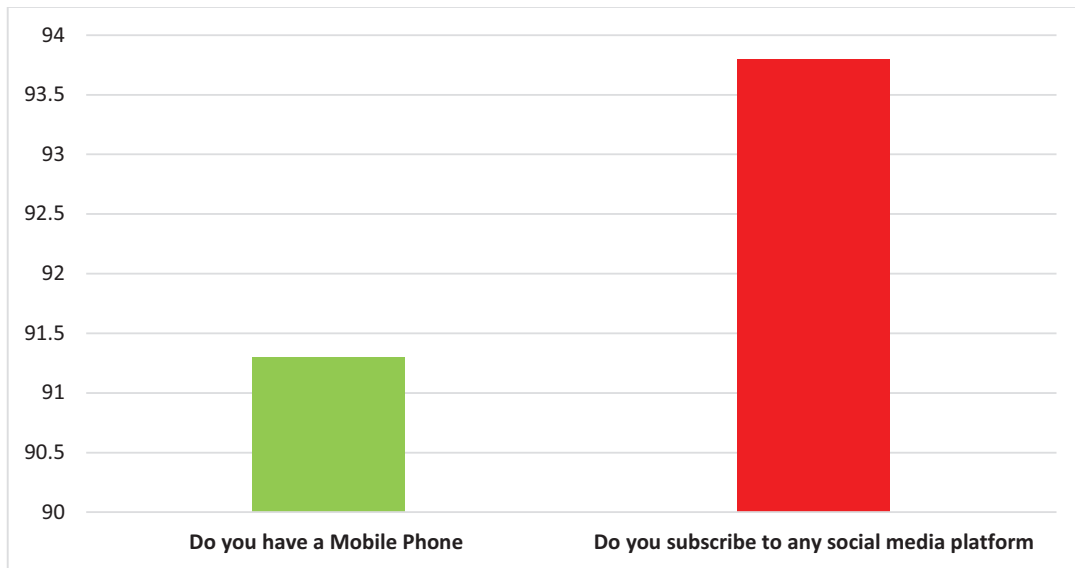


Figure 1. Access to Mobile Phone.

Source: Survey 2021; Farmers n= 80

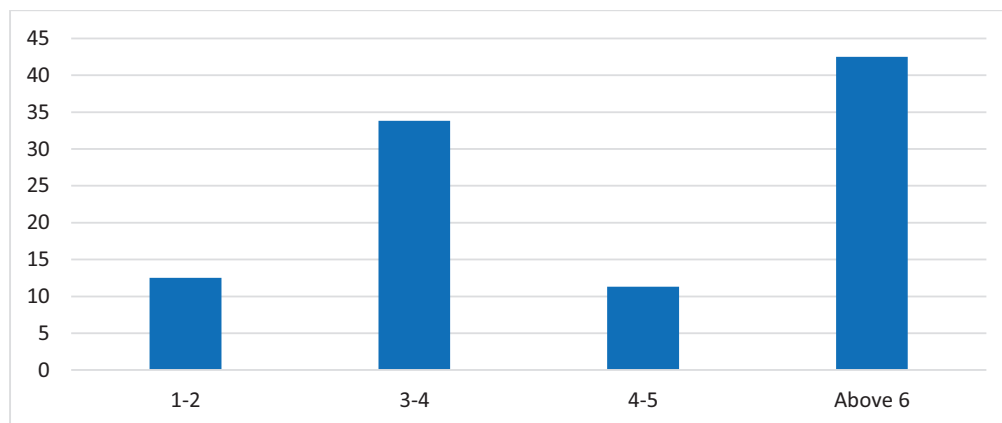


Figure 2. Years of using mobile phone.

Source: Survey 2021; Farmers n= 80

communities of people who share the same interests or activities, especially farmers will help to bring about increase in agricultural production and development. Also, a study conducted at the Michigan State University support that social media provides a quick and easy way to build relationships and interacts with people in agriculture. Figure 5 reveals that 36.3% receive extension services weekly, 11.3% receive extension services fortnightly, 12.5% receive the same monthly while 30% receive the same yearly. This implies that there is a need to augment extension services to farmers. The reason for this is because of the shortage of extension agents in Nigeria which is currently 1:5000, against

FAO'S recommendation 1:800 (World Bank, 2016).

Findings in Figure 6 show that 41.3% of the respondents express their desire to get information on the accurate time of planting while 48.8% of the respondents want accurate information via their social media on when fertilizer will be available and respondents agrees that social media has improved their farming business.

Figure 7 revealed that 83.8% and 82.5% respondents affirm that social media has given them the opportunity to reach wider audience in carrying out agri-business respectively; this helps to reduce the involvement of middle men as farmers can sell at the comfort of their home. 71.3%

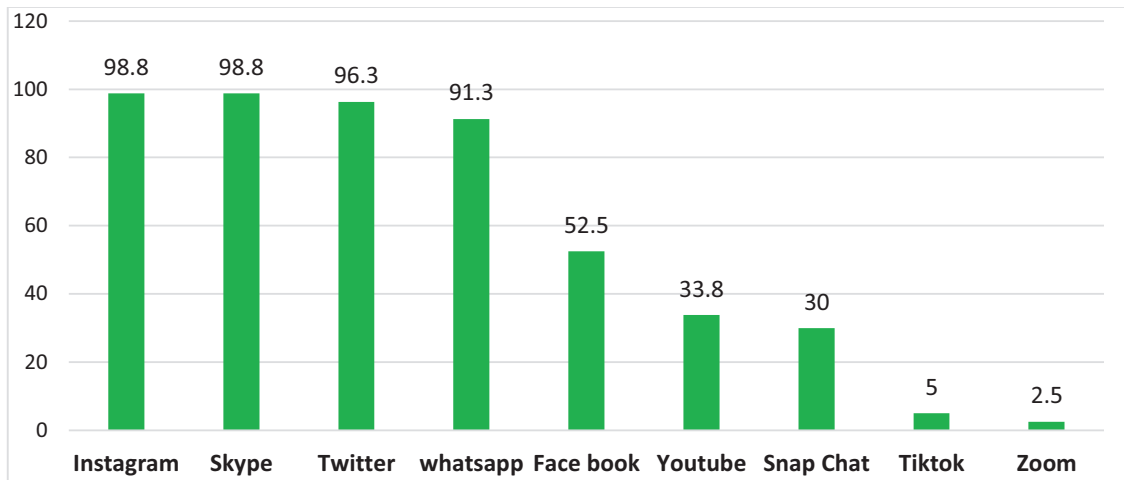


Figure 3. Level of participation in the use of social media in agricultural extension practices.

Source: Survey 2021; Farmers n= 80

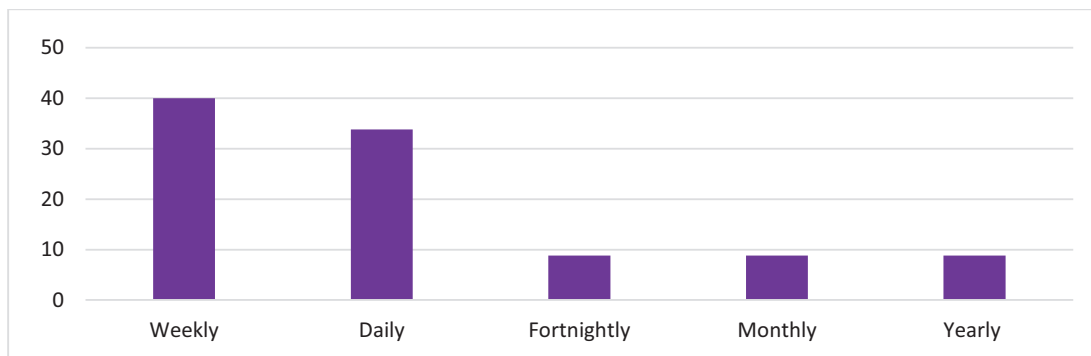


Figure 4. Extension services received through social media.

Source: Survey 2021; Farmers n= 80

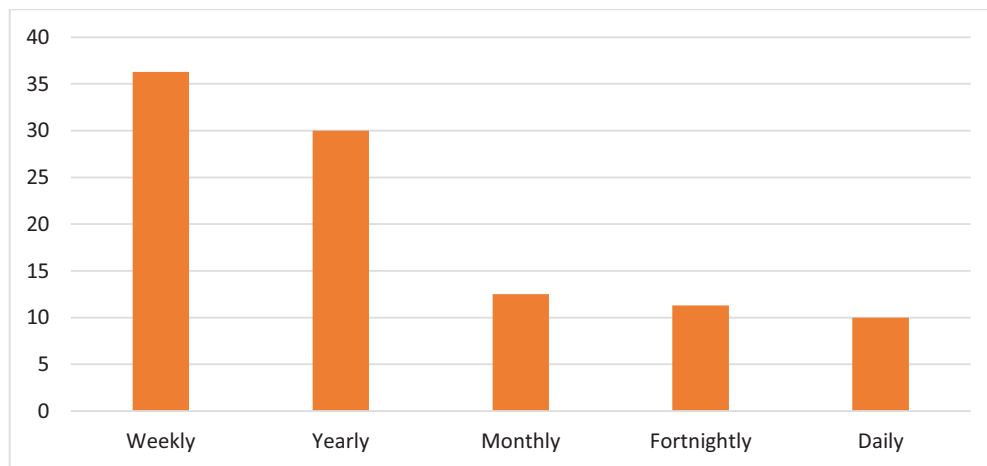


Figure 5. Frequency of receiving extension officers physically.

Source: Survey 2021; Farmers n= 80

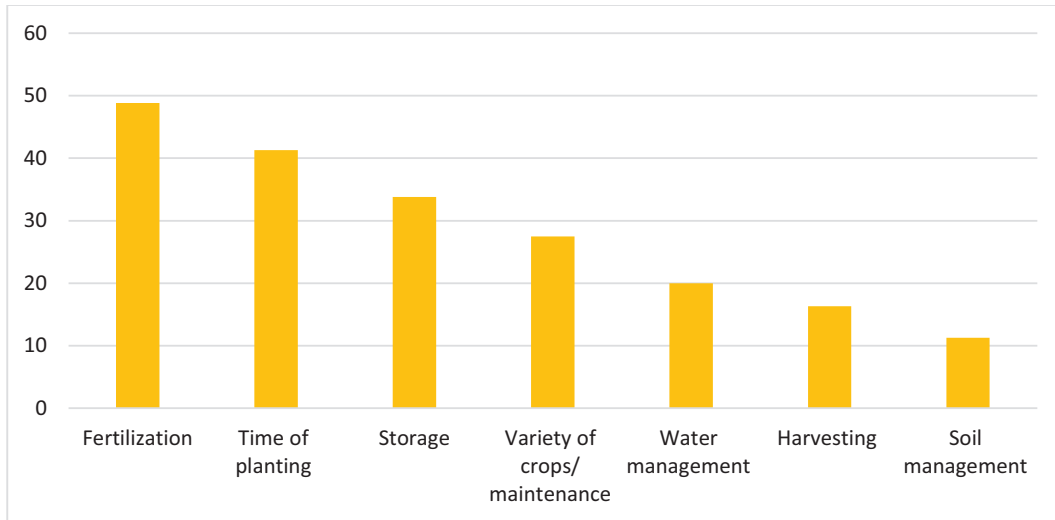


Figure 6. Types of information to improve farm practices.

Source: Survey 2021; Farmers n= 80

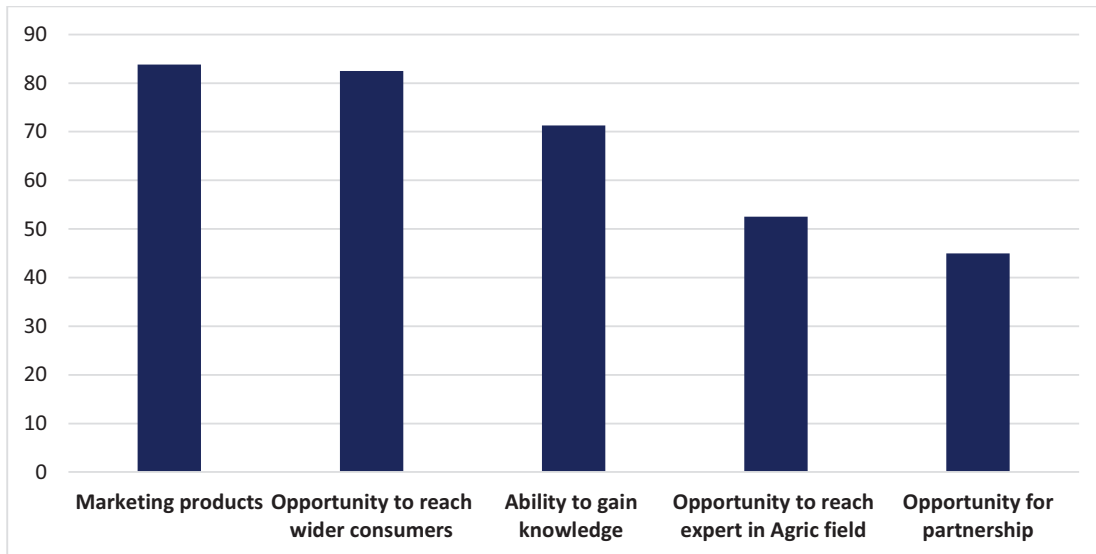


Figure 7. Benefits derived from social media in enhancing agriculture.

Source: Survey 2021; Farmers n= 80

of the respondents show that more information has been passed to farmer via social media. This finding supports that of Ebisike et al., (2021) that social media usage by farmers in Nigeria has received a boost. They further posit that the increased interest is based on the premise that an understanding of farmers' social media usage will facilitate the dissemination of appropriate technology to farmers and invariably increase in agricultural production through their adoption of innovation. This result also backs up Nwali et al.

(2022) study, which found that social media connectivity between farmers and agricultural extension agents improves farmers' information literacy, knowledge, and awareness of current farming trends, resulting in increased farming and food supply.

Figure 8 reveals the constraints faced by farmers in accessing social media usage. About 45% of the respondents highlighted financial constraints while 50% stated network unavailability as a challenge in accessing

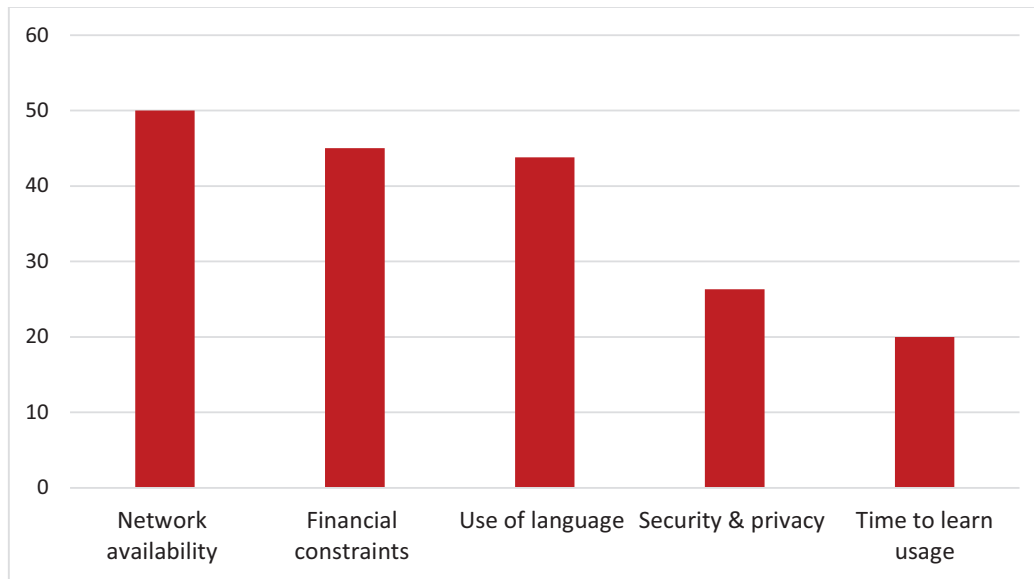


Figure 8. Constraints to the use of social media.
Source: Survey 2021; Farmers n= 80

social media in enhancing good rapport with extension agents (Kayode, 2021).

CONCLUSION

This study examined how social media can enhance agricultural extension among farmers in Gwagwalada communities. Most rural farmers have little or non-formal education to enable them participate in trending world-class innovations. This result of the study has demonstrated the fact that social media if given adequate attention will serve as a factual and indisputable tool that will promote farmers' participation and bring about sustainable development in the agricultural sector. This is because social media platforms transcend geographical boundaries and are quickly becoming the new ecstasy in the online society.

RECOMMENDATIONS

From the study it is obvious that social media can be an effective tool in agricultural extension services. Based on the study's findings and conclusion, the following recommendations were made:

1. Policy makers should set policy that can help service provider design a subsidize phone with online and offline extension application for farmers.
2. More awareness and sensitization should be carried out to assist more farmers to have access to social media to get information and also to network efficiently.

3. Social media platforms should be stationed by agricultural extension workers as part of their communication master plan in promoting farmers' participation.

Conflict of Interest

The authors declared that no conflict of interest.

REFERENCES

- Adeyongo, I. L. Sennuga, S. O., Lai-Solarin, W. I. & Ezinne, M. E. (2022). Impact of cyber-extension and social media (WhatsApp and Facebook) on Extension workers job in Federal Capital Territory, Abuja, Nigeria, *Applied Research Frontiers*, 1(1), 28-33.
- Andress, C. & Woodard, J. (2013). Impact of e-Velanimai (e-Agriculture): An ICT Enabled Agricultural Extension Model. *International Journal of Extension*, 5(2), 36-46.
- Ebisike, C., Fadiji, T. O. & Sennuga, S. O. (2021). Awareness and Usage of Information and Communication Technologies (ICTs) among Farmers in Federal Capital Territory, Nigeria. *Current Trend Agriculture Environment Sustainability*, 2(1), 1-4.
- Fadiji, T. O. & Sennuga, S. O. (2020). Influence of Characteristics and Perception on Usage of Information and Communication Technologies (ICTs) by Selected Extension Agents in Northern Nigeria, *Global Journal of Agricultural Research*, 8(2), 45-57.
- Fadiji, T. O., Sennuga, S. O. & Angba, A. O. (2021).

- Differentials in usage of Information and Communication Devices among Extension Agents: A Study on North-Western Zone, Nigeria. *American Journal of Agriculture and Forestry*, 9(1), 42-48.
- Gillis, A, & Jackson, W. (2002). *Research for nurses: Methods and interpretation*. Philadelphia: F.A Davis Company. <http://library.stikespantirapih.ac.id/wp-content/uploads/2019/01/Research-for-Nurses-Methods-and-Interpretation.pdf>
- Kaplan, M. U. & Heinlein, C. (2020) Impact of social media in enhancing Agriculture extension. *Agriculture & Food: E-Newsletter*.
- Kayode, O. (2021). Former Representative of Nigeria to UNIDO- France.
- Lai-Solarin W. I., Adeoye, W. A. & Sennuga, S. O. (2021). Technology Adoption Capabilities of Small Farm Dairy Cattle Holders in Gwagwalada, Abuja: Effects of Asymmetric Information and Extension Approaches, *International Journal of Agricultural Economics*, 6(6), 315-323.
- NSSO (2014). Key Indicators of Situation of Agricultural Households in India, NSS 70th Round, Ministry of Statistics and Programme Implementation Ministry of Statistics Program Implementation, GOI, New Delhi. <https://pib.gov.in/newsite/printrelease.aspx?relid=113796>
- Nwali, P. N., Sennuga, S. O. & Okpala, E. (2022). Evaluation of Small-Scale Women Farmers' Utilization of ICT in Accessing Agricultural Information in Gwagwalada Area Council, Abuja, Nigeria., *Green Reports*, 3(7), 34-38. DOI:10.36686/Ariviyal.GR.2022.03.07.036
- Omabuwa, A. T, Sennuga, S. O., Bako, H. & Olorunniyi, A. A. (2022). Assessment of Factors Militating Against Youths Participation in Agriculture Based Livelihood Activities in Kuje Area Council, Abuja, *International Journal of Advanced Multidisciplinary Research and Studies*. 2(2), 69-74.
- Oyewole, S. O. & Sennuga, S. O. (2020). Factors Influencing Sustainable Agricultural Practices among Smallholder Farmers in Ogun State of Nigeria, *Asian Journal of Advances in Agricultural Research*. 14(1), 17-24. DOI: 10.9734/ajaar/2020/v14i130120
- Sennuga, S.O. (2019). Use of Information and Communication Technologies (ICTs) among Smallholder Farmers and Extension Workers and its Relevance to Sustainable Agricultural Practices. A Thesis submitted for the degree of Doctor of Philosophy (PhD), Coventry University, United Kingdom.
- Sennuga, S. O., Baines, R. N., Conway, J. S. & Naylor, R. K. (2020a). Role of Information and Communication Technologies (ICTs) in Enhancing Food Utilization among Smallholder Farmers' Households in Northern Nigeria, *International Journal of Information and Knowledge Management*, 10(1), 24-32. DOI: 10.7176/IKM/10-1-05
- Sennuga, S. O., Conway, J. S. & Sennuga, M. A. (2020b). Impact of Information and Communication Technologies (ICTs) on Agricultural Productivity among Smallholder Farmers: Evidence from Sub-Saharan African Communities, *International Journal of Agricultural Extension and Rural Development Studies*, 7(1), 27-43. <https://www.eajournals.org/wp-content/uploads/IMPACT1.pdf>
- Shantichandra, E. T., Freeler, R. E. & Dickson, I. O. (2013). Impact of social media in enhancing Agriculture extension. *Agriculture & Food: E-Newsletter*.
- World Bank (2016). World Development Report 2016: Digital Dividends. Washington, DC. <https://www.worldbank.org/en/publication/wdr2016>
- Yin, R. K. (2003). Applications of a case study research: Applied social research, methods series, 34. Thousand Oaks, CA: Sage Publications.