Farmers' Readiness to Adopt Social Media as Agro-Information Reception Tool During Covid-19 Pandemic in Ondo State, Nigeria
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Abstract:

This study examined farmers' readiness to assess social media as agro-information reception tool in the study area. An interview guide was used in collecting data from 120 farmers who were randomly selected. Data collected were analysed with the aid frequency counts percentages and logit regression. The results showed that half of the respondents (50%) had primary education. About 90% were aware of whatsapp and 12.6% were aware of blogs, respectively. Education, farming experience, membership of farmers' group and extension access were the variables that positively influence farmers' readiness to assess social media as agro-information reception tool while respondents' age negatively influence readiness to assess social media. Enlightenment programmes for farmers on the use of social media and an improved extension services to keep the farmers acquainted with the benefits of social media.
Keywords: social media, information and communication technology, agro-information, farmers

Introduction
Communication has been one of the basic needs of human being after food, shelter and clothing. With development and civilization the need for communication has also increased. Development in communication has progressed from mass media tools like radio and television towards more user centric devices with today's computers and mobile phones (Saravanan and Bhattacharjee, 2016). This has enabled man to think more, do more and achieve more. Technology in present world is something that we cannot live without not just because it makes our life easier but also better. Information and Communication Technology is being used for development purpose because of their mass reach. Information and Communication Technology (ICT) tools are relatively easier to use and are gaining popularity in agricultural sector (Saravanan and Bhattacharjee, 2016). Social media has transformed this world into a global village by reducing the distances of information exchange. Social media will guarantee a timely dissemination and reception of agricultural information to farmers.

Social media active users have reached around 3 billion globally as at April, 2017. In Nigeria, Facebook has 22 million active users, YouTube gets more than 7 million active users each

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month, Instagram get about 5.7million users while Twitter has 6 million users (We are social, 2017). WhatsApp also have about 42.8 million users in Nigeria. All these statistics prove the huge potential that social media can be for extension practitioners to reach out to farmers. In the agricultural sector, there is growing rate of social media usage amongst stakeholders.

Since agricultural extension service delivery is primarily a communication process, proper integration of social media is necessary. With the challenges like limited availability of ICTs and internet facilities in rural areas, their suitability to only educated and online clientele, lack of awareness and readiness to accept social media by some farmers and extension professionals, breach of individual privacy, piracy of the materials and irrelevant information, the success of social media depends on commitment level of extension workers and community members in using social media for extension. (Saravanan *et al.*, 2015).

In spite of these problems, social media are becoming popular among rural people. Social media will guarantee a timely dissemination and adoption of agricultural information to farmers. Therefore, the need to examine the farmers' readiness to adopt social media as agro-information reception tool during Covid 19 pandemic become imperative.

The general objective of the study was to determine the farmers' readiness to adopt social media tools for agro-information reception. The specific objectives were to; assess the level of awareness of social media by farmers in study area, and determine factors influencing farmers' readiness to assess social media as agro-information tool.

Methodology
The study was conducted in Ondo State, Nigeria. The state lies between longitudes 40 30" and 6" East of the Greenwich Meridian, 50 45" and 80 15" North of the Equator. Its land area is about 14,788.723 Square Kilometres (km2). This means that the state lies entirely in the tropics. Ondo State is bounded in the North by Ekiti/Kogi States; in the East by Edo State; in the West by Osun and Ogun States, and in the South by the Atlantic Ocean. (Ondo State Government, 2011).

The major occupation of the populace in the State is farming and the agro-climatic condition is suitable for cultivation of many tropical crops. Most of the inhabitants are small scale farmers with few of them practicing farm mechanization in large scale. The farmers cultivate both arable and cash crops. The cash crops cultivated include, Cocoa, Rubber, Kola nut and Palm trees, while the arable crops cultivated include yam, maize, cassava, cocoyam, sweet potatoes and vegetables.

The data was collected with aid of interview guide administered on crop farmers. Multi stage sampling procedure was used to select respondents for the study. The first stage involved a purposive selection of one (1) local government area, LGA each from the four ADP zone in Ondo State (Akure, Akoko, Owo and Okitipupa). The second stage involved selection of one (1) communities from each selected LGA selected. In the third stage, a total of thirty (30) farmers were randomly selected

from each of the selected communities, making a sample size of one hundred and twenty (120).

Percentages and mean were used to analyse the economic characteristics and level of respondents' level of awareness of social media. Logit regression model was used to analyse factors influencing respondents to assess social media as agro-information reception tool. The logit regression is a unit or multivariate technique which allows for estimating the probability that an event occurs or not by predicting a binary dependent outcome from a set of independent variables. The logit model is based on cumulative logistic probability function and it is computationgally tractable. According to Gujarati and Porter (2009), it is expressed as:

$$P_i = E\ (Y = 1 \mid X_i) = \beta_0 + \beta_i X_i \dots\dots\dots\dots\dots\dots \quad (1)$$

For ease of estimation, equation 1 was further expressed as:

$$P_i = \frac{1}{1+e^{-z_i}} = \frac{e^{Z_i}}{1+e^{Z_i}} \dots\dots\dots\dots \quad (2)$$

Where:

P_i = Probability of an event occurring

$$Z_i = \beta_0 + \beta_i X_i \quad (i=1, 2, 3, \text{-- -----------------------------}20)$$

The empirical model of the logistic regression used for this study assumed that the probability of farmers' readiness to access social media as agro-information tool is expressed as:

$$P_i = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \dots + \beta_n X_n}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \dots + \beta_n X_n}} \dots\dots\dots \quad (3)$$

P_i ranged between zero and one and it is non-linearly related to Z_i. Z_i is the stimulus index which ranged from minus to plus infinity and it is expressed as:

$$Z_i = \left(Ln \frac{P_i}{1-P_i} \right) =$$
$$\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 +$$
$$\beta_8 X_8 + \dots + \beta_n X_n + \mu \dots\dots\dots\dots\dots\dots \quad (4)$$

To obtain the value of Z_i the likelihood of observing the sample was formed by introducing a dichotomous response variable. The explicit Logit model is expressed as:

Y_i*
$$= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \dots + \beta_n X_n + \mu \dots$$
$$\dots\dots\dots\dots\dots\dots \quad (5)$$

Where;

Y_i* = dichotomous response variable (1=readiness to access social media; 0= otherwise).The X variables used were:

X_1 = Age (years);
X_2 = Sex of crop farmer (Male= 1; Female=2)
X_3 = Number of years of formal education (years);
X_4 = Farming experience (year)

X_5= Respondents' income (N);
X_6= Cultivated farm size (hectares)
X_7= Membership of farmers' group. (Yes = 1; otherwise=0);
X_8= extension access (Yes = 1; otherwise = 0)
β_0 = Constant term;
β_1 - β_8 = Coefficient of stimulus variables;
μ = error term

Results and Discussion
Respondents' Level of Awareness of Social Media
Table 2 shows that 90% of the respondents were aware of Whatsapp as social media tool to assess agro-information on their farming activities. The proportions of the respondents that were aware of Facebook and Instagram were 85.4% and 43.7%, respectively. About 27% of the respondents were aware of twitter while only 12.6% were aware of blog as social media tool to access agro-information on farming activities. The result is consistent with the findings of Sulaiman *et al.*, (2018) which found that Whatsapp remains the most media platform by farmers in Keana Local Government Area of Nasarawa State.

Table 2: Level of awareness of social media

Social media	Aware (Percentage)
Facebook	85.4
Whasapp	90.0
Instagram	43.7
Twitter	26.0
YouTube	32.6
Blog	12.6

Factors Influencing Crop Farmers' Readiness to assess social media as Agro-Information Tool

Table 3 present factors influencing crop farmers to assess social media as agro-information reception tool (log likelihood = 34.13 and Chi^2 = 0.0253). The pseudo R^2 value of 0.2880, indicates that the overall is significant and good fit. The explanatory variables included in the model are collectively explaining the decision of the farmer to access social media as an agro-information tool. Out of the eight variables included in the model, education, extension access, membership of farmers' group and farming experience were the variables that positively influences farmers' access to social media as an agro-information tool. Meanwhile, the age of the farmers had negative influence on farmers' access to social media as agro-information tool.

Table 3 reveals that the coefficient of farmers' age was negative and significant. The marginal effect indicated that as the farmer gets older by one more year, the probability of accessing social media as agro-information tool decreased by 1.0%. This implied that as the farmers get older in age, their readiness to access social media reduced. This result is in contrast with the findings of Jiriko and Jiriko, (2015) and Idu, *et al.*, (2021) which find positive relationships between age and social media usage.

The year of formal education of the farmer was positively significant. Its marginal value of 0.18 implied that as the farmer accesses one more year of formal education, the likelihood of accessing social media as agro-information tool increased by 18%. Education enhances exposure to knowledge. This result agrees with the findings of Awhareno, (2016) and Idu, et al (2021) that education had positive relationship with ability to use ICT.

The result further reveals that year of farming experience was significant. The marginal value of 0.333 indicated that an increase in farming experience by one year will bring about a 33.0% increase in the likelihood of farmers accessing social media as agro-information tool. This result conforms to the findings of Awhareno, (2016) who reported that working experience had a significant relationship with the use of Cyber-extension facilities.

Membership of farmers' group had positive and significant effect on readiness to access social media. The marginal value of 0.305 implied that being a member of farmers' group would increase the probability of farmers; readiness to access social media as agro-information tool.

Extension access was found to be positive with marginal value of 0.13 and significantly related to farmers' readiness to access social media as agro-information tool. By implication, it means that farmers with higher extension access are more likely to be ready to access social media. Farmers with more ties to extension agents will accrue advantage from reciprocal knowledge exchange with experts (Pratiwi & Suzuki, 2017).

Table 3: Factors influencing respondents' access to social media as agro-information tool

Variable	Coefficient	Marginal effect
Age	-0.0845988 **	-0.0124123
Sex	0.7515779	0.1102714
Education	1.71314 ***	0.1814526
Farming experience	2.274792 ***	0.333757
Income	1.50e-07	2.20e-08
Membership of Farmers' group	2.080534***	0.3052556
Farm size	0.1853611	0.0271961
Extension access	1.257735**	0.1332169

Number of Obs = 120
Log likelihood = -42.184133; LR chi^2 (20) = 34.13**; prob.> chi^2 = 0. 0253
Pseudo R^2= 0.2880
Source: Field data, 2020 ***P ≤ = 0.01, ** P≤ 0.05

Conclusion and Recommendation

Most social media tool of agro-information reception the farmers in the study area were aware of was whatsapp followed by Facebook. The study showed that education, farming experience, membership of farmers' group and extension access were socio-economic variables that influence farmers' readiness to assess social media as agro-information tool. Enlightenment programmes for farmers on the use of social media and an improved extension services to keep the farmers acquainted with the benefits of social media usage.

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