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Utilization of social media in accessing agricultural information among poultry farmers in delta north agricultural zone, Nigeria: Implication for agricultural extension service delivery

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Abstract

The study looked at how poultry producers in Delta North agricultural zone, Nigeria used social media to access agricultural information. 128 respondents were chosen by simple random sampling (poultry farmers). A standardized questionnaire and interview schedule were used to gather data. The information gathered included details about the socioeconomic traits of chicken producers, their usage of social media sites, and the barriers and enablers to their use of these platforms. Data were analyzed using descriptive and inferential statistics. Of the respondents, 39.10% were women while the majority, 60.90%, are men. 43 years old was the average age that was noted approximately 59.17% of those surveyed. Household size, farm size, and monthly income were 7 persons, 2698 birds, and N162,500 respectively. Facebook, WhatsApp, and YouTube were shown to have significant levels of usage in the survey. Advertising, education, and the exchange of agricultural knowledge were the main drivers behind the use of social media. According to the hypothesis, there exists a significant association ($p < 0.01$) between the parameters that enable and restrict the use of social media and the usage level of poultry farmers. The main obstacles to social media use that were noted were high costs of data, inadequate power supply, and inadequate service from network providers. It was suggested that development organizations and Delta North agricultural extension service providers use social media to disseminate agricultural information and offer information that poultry farmers would find useful.

Keywords: Access; Utilization; Social media; Poultry; Farmers and information

1. Introduction

Since the internet and social media are the venues where we "showcase" our life experiences, they are becoming increasingly important in our daily lives. They also show a range of aspects of our place in both the real and virtual worlds of social life Ugur Gunduz, [2017]. When used properly it can be a valuable addition to a department's communication strategy. Individuals or groups can create web content, exchange information, and engage conversations on social media networks. It comes in diverse formats, such as wikis, blogs, microblogs, social networking, instant messaging, photo and video sharing websites, podcasts, widgets, virtual worlds, and more. University of South Florida, [2020].

Our lives now seem to revolve on multitasking, and we often wonder how we manage to get everything done. Our personal and social life, as well as our jobs and education, rely on our smart-phones. Our everyday lives now involve a large amount of application of the Internet. Frances, [2020] Also, The social networking platform has become mandatory

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element in many companies, business and marketing strategy Hanna *et al*,[2011].How ever there is virtually no website free of some advertisements or push to buy something Strandburg, [2013].

Businesses from a diversity of industries have adopted online platforms in order to establish and promote or encourage further connection with their clients, thanks to online platforms' ability to accommodate large audiences of varied groups and interests. According to Rahim & Bakare [2021], Participation, conversionality, connection, community and communality, and openness are the five elements of social media characteristics. Several characteristics make social media a unique tool. According to Jasmine [2020] Users of social media provide material. Individuals can start their own blogs, share their opinions on Facebook or Twitter, or upload a YouTube video blog (vlog) detailing their most recent trip. Users can actively participate in the communication process thanks to this because they have the ability to provide businesses feedback; audiences are more receptive to brand messaging creating a two-way conversation. Instant communication is another feature; audiences can access information via social media platforms, negating the need for them to wait for a planned news program. Social media also promotes a feeling of community and connectivity by uniting individuals worldwide via the internet. Social media also foster a sense of interconnectedness and community by bringing people across the world together online. Valentini &Kruckeberge,[2012] Wrote that the existence of online platforms is contingent upon users participation, as its interactivity creates a communal experience. According to Stieglitz and Dang-xuan, [2013], social media provides the avenue by which a group of like-minded being can trade visions and analyze facts on public matters.

Digital networks have a big impact on how people use the web, behave, and develop their marketing strategy. Habibi et al [2014]. Social media helps a lot of organizations, including banks, GSM carriers, airline firms, and agribusinesses, improve their marketing and promotion efforts. Because agricultural entrepreneurs are associated with the growth of contemporary agriculture and are thought to be among the particular groups using social media, academics and research institutions have begun to pay more attention to them. however, if social media is used to its fullest capacity, it can serve as a very useful tool.

Rural farmers need to know why they should use social media to further their agricultural industry. Jijina & Raju, [2016]. Such as share ideas and information among farmers and research institutes, extension agents or their colleagues and convert it into practical actions, form special interest groups, develop innovation competencies, connect farmers and aggro allied industries and network with other farmers, Agribusiness and consumers domestically and globally and communicate with other farmers, extension agent and research institutes

Poultry farmers continuously need information, idea, knowledge and skills development from research institutes for better production practice and eventual increase in sales and report. Information may be in form of new technologies like the use of modern facilities, machineries, credit facilities or information on drugs, new vaccines, disease outbreaks, feeds and formulation of feeds, tools and equipment, methodologies etc. However, poultry farmers must first have privilege to these online platforms and learn how to effectively use them in their production system and practices. Aliyu and Alfred [2017], stated that it is a big challenge in Nigeria due to its high Adoption costs, lack of information and security concerns.

The poultry system in Nigeria typically lacks access to organized inputs. The System of poultry production especially in the rural areas has constrained attempt to institute health extension services. The problem of lack or inadequate use of drugs by the poultry farmers and use of improved modern poultry facilities, Inadequate number of stakeholders (research institutes, organization and extension agents), The available and accessible information sources for poultry producers and their information needs are not being analyzed adequately. Although, farmers get access to agricultural information through extension agents various methods but these methods are limited and thus calls for the use of new methods of ensuring that farmers get access to adequate information Olaniyi, [2013] Based on this premise, the specific objectives of this study were to:

- Examine the extent to which poultry farmers use social media platforms
- Ascertain the perceived factors that facilitate the utilization of social media by poultry farmers and
- Identify the constraint to the use of online platforms by the poultry farmers in area under study.

1.1. Research Hypothesis

- H_0: There is no significant relationship between the factors that facilitate and constrain the use of social media and farmer's level of usage.

2. Methodology

2.1. The Study area

The study was carried out in Delta North agricultural zone, Nigeria. Delta North is one of the agricultural zones and it consist of nine local government areas which are Oshimili North and south, Aniocha South, and North, Ndokwa East, and West, Ika South, Ika North East, and Ukwuani Local Government Areas (LGAs). The area is low lying without any noticeable hills and mountains with an annual rainfall of over 2000mm, temperature ranges from "282°C" and "341°C" with a relative humidity of over 80% there are two main season-raining season (April to October), dry season (November–march). The land is fertile and suitable for agricultural activities. It has a population of 1,293,074 National population commission [2022].

2.2. Sampling Procedures

A multi stage sampling procedure was adopted for the study. Out of the 9 local government areas in Delta North Agricultural Zone, 20% was randomly selected for this study using the ballot system given a total of 3 Local Government areas. Two rural communities known for producing oil palm fruits were purposively selected from each Local government area, to give a total of 6 rural communities that was sampled for this study. In the final stage, Poultry farmers were identified with the help of key informants and 10% of them identified were randomly selected giving a total of 128 poultry farmers selected for this study.

2.3. Method of Data Collections

Data were collected from primary source and was obtained by structured questionnaire administered to 128 poultry farmers but only 120 was retrieved and was used for this study. Data were statistically treated with descriptive _statistics such as frequency counts, percentage, and mean scores derived from a 4point Likert type scale of strongly agree 4, agree 3, disagree 2 and strongly disagree 1, measured the factors that facilitate and constrain using social media while very often 4, often 3, rarely 2, never 1 measured the extent to which poultry farmers make use of online platforms. Decisions on likert type scale was taken on a cutoff point of 2.50 where 4 is 10, 3 is 7.5, 2 is 5 and 1is 2.5 thus 10 divided by 4 = 2.5. Hypothesis was tested using multiple regression.

Multiple regression model for the influence of factors that facilitate and constrain poultry farmers to the utilization of social media in accessing agricultural information is specified as follows:

The implicit form is:

$$Y = f(X_1, X_2, X_3, X_4, \ldots\ldots X_n\ u)$$

while the explicit form is stated as:

$$Y = b_n + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + \ldots.. b_nx_n + u.$$

Where:

Y in the model is the dependent variable and x_1-x_n are the independent variable.

Y = Use of social media (level of usage)
X_1= Cheapest tool in assessing agricultural information (yes=1,No=0)
X_2= quickest tool (yes1, otherwise 0)
X_3= learning and sharing of information and technology (yes 1,otherwise 0)
X_4= interaction with agricultural experts (yes 1,otherwise 0)
X_5=partnership (yes 1,otherwise 0)
X= advertisement of agricultural products and business (yes 1,otherwise 0)
X_7= dissemination of modern technologies (yes 1,otherwise 0)
X_8= unavailability of power supply (yes 1,otherwise 0)
X_9= inadequate network service (yes 1,otherwise 0)
X_{10}= high cost of data (yes 1,otherwise 0)
X_{11}= lack of relevant information (yes 1,otherwise 0)
X_{12}= lack of technical skills (yes 1,otherwise 0)

X_{13}= inability to afford gadgets (yes 1,otherwise 0)
u= error term.

3. Results and discussion

3.1. Socio-economic Characteristics of the Respondents

3.1.1. Sex of respondents

The results presented in table1 revealed that most (60.83%) of the poultry farmers in the study area were male while (39.17%) were females. This implies that male dominates the poultry sector (production, marketing and distribution) in the area under study. This result is in variance with Amusan et al [2021] who found that women dominated and play a major role in subsistence crops and livestock production, contributing about 65% to agricultural activities in Nigeria.

3.1.2. Age

An average age of 43yeaars was recorded among the poultry farmers indicating that the farmers are in their prime and thus are socially and economically active. Thus age is expected to have a positively influence on their usage level. Age is found to have a substantial influence on agricultural production generally [David et al 2023].

3.2. Marital Status

The data indicated that 59.17% of the farmers had spouses; about 20.00% were single while 13.33% were divorced. This finding suggests that married people were predominance among poultry farmers. which could imply that married poultry farmers will pay more attention to their business hence they will always want to source for information that will enhance their production efficiency due to the responsibility they have as family men and women. This agrees with Abushe et al [2023] and Adesiyan, [2014].

3.3. Educational Level

Level of education revealed that 53.33% of poultry farmers in the study area had tertiary education, some 34.17% had secondary education and 12.50% had only primary school certificate. This result showed that majority of the respondent had high literacy level and this aids their exposure to social media and help them in harnessing information from social media on new technology and innovations 'on poultry production that will help in the development of their business. Odebode,[2018] stated that education is an integral factor that aids people in acquiring their desired goal.

3.4. Household Size

It was identified that 57.50% had household size between 5-10 persons while 35.83% had between 1-4 persons and 6.67% recorded above 10 persons in their household. An average size of 7 persons was recorded in the household. This indicates that poultry farmer's area under study had a large household size. Thus house hold members in the areas make up part of the work force. This findings agrees with Mbwambo et al [2021] who reported that having a large household is common with rural farmers.

3.5. Farming experience

According to the results of agricultural experience, 80.83% of the respondents had been farming for one to ten years, while roughly 14.17% had been farming for eleven to twenty years. About 5% had experience of above 20years. A mean 9 years of experience was recorded. This suggest that farmers had quite a reasonable numbers of years of experience in the poultry sector thus had knowledge about the business and the area in which they need information and will strive for those information. The length of service in a business influence the skills acquired Obetta et al [2020].

3.6. Farm Size

On farm size it was shown that 38.33% had below 1000 birds, about 33.33% had between 1001-20000 birds, and 21.67% had between 2001-3000 birds while 6.67% had above 3000 birds. An average farm size of 2698 birds was recorded. This suggest that farmers in the poultry industry within the region operates in medium scale thus the economic strength of a farm is known by its size hence the farmers will always source for information that will bring development and growth of the farm. this is in agreement with Corsi, [2017] stating that farms economic strength is related to its size.

3.7. Monthly Income

The farmers had an average income of ₦162,500 monthly. Indicating that poultry farmers earned much more than the government approved minimum wage thus poultry business is seen as a profitable enterprise thus those involved will put effort to sort for information that will bring improvement in their business.

3.8. Extension Contact

Result revealed that (8.33%) had regular contact with extension agents, Occasionally, 4.17% had extension contact, about 5% rarely had extension contact, while 82% never had extension contact. This indicates that extension service available to farmers in the area is limited. Thus extension services are needed to create awareness and information on new innovations. Hence farmers tend to sought information from different sources. This agrees with Orisakwe and Agomuo [2011], who noted that regular contact with extension agents motivates and expose the farmers to innovations and gives information on how to use technologies. Also Agbamu (2006) posits that farmers' behavior change is influenced by extension contact.

Table 1 Respondents socio-economic characteristic

Variables	Frequency(n=120)	Percentage	Mean
Sex			
Female	47	39.17	
Male	72	60.83	
Age			
20-30	16	13.33	
31-40	38	31.67	
41-50	47	39.16	43years
Above 50	19	15.83	
Marital status			
Single	24	20.00	
Married	71	59.17	
Divorce	16	13.33	
Widowed	9	7.50	
Level of education			
Primary school only	15	12.50	
Secondary	41	34.17	
Tertiary	64	53.33	
Household size			
1-4	43	35.83	
5-10	69	57.50	7persons
Above 10	8	6.67	
Farm Experience(years)			
1-10	97	80.83	
11-20	17	14.17	9years
Above 20	6	5.00	
Farm Size			

Below 1000	46	38.33	
1001-2000	40	33.33	
2001-3000	26	21.67	2698 birds
Above 3000	8	6.67	
Monthly income(₦)			
10000-50000	19	15.83	
51000-100000	17	14.17	
101000-200000	20	16.67	₦146,480
Above 200000	25	20.83	
Extension Contact			
Regularly	10	8.33	
Occasionally	5	4.17	
Rarely	31	5.00	
Never	24	82.00	

Source: field survey 2024

3.9. Extent of usage of Social Media Platforms by poultry Farmers

Table 2 provides results on the extent to which poultry farmers uses social medial platforms in Delta North agricultural zone. It was noticed that Facebook, WhatsApp, and YouTube had a high usage (mean=3.19), (mean=3.19) and (mean=2.57) respectively. The implication is that poultry farmers in the area of study get information about poultry enterprise through Facebook, WhatsApp, and YouTube. This agrees with Bite and Anand, [2017] who reported that the most popular social media in agricultural marketing is Facebook, YouTube, WhatsApp and Twitter. The usage index of 0.57 shows that 57% of farmers in the poultry industry were using these social media platforms to access information.

Table 2 The extent to which poultry farmers utilize social media platforms

Usage	Mean	Std. Deviation	Remarks
Facebook	3.48	0.11	High usage
WhatsApp	3.19	0.21	High usage
YouTube	2.57	0.32	High usage
Twitter	1.99	0.42	Low usage
Instagram	1.90	0.48	Low usage
LinkedIn	1.48	0.54	Low usage
Googlemeet	1.41	0.58	Low usage

Cut off score = 2.50 (> 2.50 = Utilized;< 2.50 = Not utilized) Grand mean = 2.29, Index = 0.57. Source: field survey 2024

3.10. Factors that Facilitate the Utilization of Social Media

The result in table 3 shows that poultry farmers use social media in advertising agricultural products and services (mean=3.77), use for learning and sharing of information (mean=3.58), provides opportunity to interact with agricultural experts (mean=3.32) and form key partnership (mean=3.32), majority also uses it because it is the quickest tool in obtaining agricultural information (mean=3.48), access some poultry farming modern technologies (mean=3.39), cheapest tool in accessing agricultural information (mean=2.80).This indicates that among all the factors that facilitated their utilization, advertisement, learning and sharing of agricultural information and being the quickest tool in accessing agricultural information, was ranked highest which implies that the farmers used online platforms in advertising their products and also share and access information about diseases outbreak, improved feeds, breeds and

any vital knowledge needed for production. The index of 0.85% shows that 85% of poultry farmers were facilitated by these factors to utilize social media in accessing agricultural information.

Table 3 Perceived factors that facilitate the utilization online platforms among poultry farmers

Statements	Mean	Std. Deviation	Rank
Social media used for advertising agricultural products and services	3.77	0.11	1st
Social media used in learning and sharing of agricultural information	3.58	0.21	2nd
Social media the quickest tool in obtaining agricultural information	3.48	0.41	3rd
Social media is used in the dissemination of some poultry farming modern technology	3.39	0.34	4th
Social media provides opportunity to speak with agricultural experts	3.32	0.32	5th
Social media provides opportunity to key partnership	3.32	0.43	5th
Social media the cheapest tool in accessing agricultural information	2.80	0.51	7th

Cut off score=2.50(≥2.50= facilitate ;<2.50=Not facilitated) Grand mean = 3.38, Index = 0.85. Source: field survey 2024

3.11. Constraints to the Use of Social Media

Table 4 revealed the constraints identified by poultry farmers to be high cost of internet access i.e., cost of data (mean=3.26), inadequate service from network providers (mean=3.21) and inadequate or epileptic power supply (mean=3.10),lack of relevant information on poultry production (mean=2.97),lack of technical skill to operate gadget (mean=2.73) and inability to afford gadgets (mean=2.66).This imply high cost of data, inadequate or epileptic power supply and inadequate service from network providers were the major factors that constraint social media uses because it ranked the highest. Other factors identified were lack of information relevant to poultry production, lack of technical skill to operate gadget and inability to afford gadgets. This aligns with Sokoya *et al* [2012] cited in Edeoghon [2018] who claimed that poor quality of available ICTs, erratic electricity, poor connectivity and high data consumption tariffs are some of the problems faced with the use of social media. In Ogori Mangogo local government area of Kogi State, Nigeria, respondents' usage of social media to source agricultural information was hampered by lack of technological know-how, illiteracy, and financial obstacles/levies Adeojo and Opeyemi, [2019].

Table 4 Constrains to utilization of social media

Statements	Standard deviation	Mean	Rank
High cost of data	0.25	3.26	1st
Inadequate power supply	0.28	3.10	2nd
Inadequate service from network providers	0.31	3.21	3rd
lack of relevant information on poultry production	0.53	2.97	4th
lack of technical skill or know-how	0.30	2.73	5th
Inability to afford gadgets	0.33	2.66	6th

Cut-off score=2.50 (>2.50 = constraint;<2.50 = no constraint). Grand mean=2.99) Source: field survey 2024

3.12. Testing of Hypothesis

There is no significant relationship between the factors that facilitate and constrain the use of social media and farmer's level of usage.

The test adopted a multiple regression model where level of usage is the dependent variable (Y)

Table 5 The test of Relationship between the factors that facilitate and constrain the utilization of social media and farmer's level of usage

Variables	B	Std. Error	Beta	T	Sig.
(Constant)	1.432	.774		-1.851	.463
Cheapest tool	-0.11	0.15	-0.11	-0.69	0.49
Quickest tool	0 .15	0.13	0.12	1.19	0.24
Learning and sharing	0.09	0.14	0.06	0.63	0.53
Interaction	0.37	0.26	0.29	1.39	0.17
Partnership	0.43	0.25	0.36	1.70	0.09
Advertisement	0.56	.172	.249	3.332	.001
Information dissemination	-0.45	0.14	-0.31	-3.210	0.002
Epileptic power supply	0.40	0.16	0.21	2.69	0.01
Inadequate network	0.51	0.19	0.23	.2.57	.011
High cost of data	-0.05	0.24	-0.04	-0.22	0.82
Lack of relevant information	0.65	0.18	0.22	.2.47	0.02
Lack of technical skills	0.03	0.11	0.03	0.31	0.76
Inability to afford gadgets	0.29	0.10	.270	2.89	0.01

Source: field survey 2024

The result in table 5 shows that there was a significant relationship ($p=0.001< 0.01$) between the factors that facilitate and constrain the utilization of social media and farmers level of usage. The R^2 0.72 implies that 72% variation in the farmers level of usage is accounted for by the factors that facilitate and constrain the use of social media. These are advertisement, dissemination of information, epileptic power supply, inadequate network services, lack of relevant information and inability to afford gadgets. Advertisement is significant ($p=0.001< 0.01$, $t= 3.33$) to the utilization of online platforms by poultry farmers. This implies that farmers being able to advertise their products and also receive advert of inputs needed to improve their production through the social media is a major factor that facilitate their utilization level. This agrees with Edeoghon and Esene, [2018], dissemination of information is a significant but negatively related ($p=0.002<0.05$, $t= -3.21$). the implication is that an increased in the amount of irrelevant information available in the social media will lead to a unit decreased in the utilization level of social media thus farmers will seek to access information on subjects that were relevant and properly disseminated from the social media platforms. Epileptic power supply has a significant ($p= 0.014<0.05, t =2.49$) relationship in the level of utilization. This indicates that poor power supply significantly had an effect on the level of social media usage thus when farmers cannot access constant electricity to power their gadgets the level of usage will be affected as electricity is needed to power their gadgets. Inadequate network is significant at 5% and positively related. implying farmers will not adequately access information on the various social media platforms as a result of inadequate network provided, thus in turn have an impact on the utilization by farmers. This finding agrees with Sokoya et al [2012] who reported that poor quality of ICTs, epileptic electricity and poor connectivity is a predominant factor that affects the usage of social media. Lack of relevant information is significant at 5% level of significant ($p=0.016<0.05$, $t=2.47$). This indicates that poultry farmers will continue to sources for information on the social media if the information posted on social media is relevant to poultry production thus this will enhance their utilization level and vice versa. Inability to afford gadget is significant at 5% level of significance implying that farmers can only use social media if they can afford the gadget. This is in line with Edeoghon and Esene [2018] that found that high cost of gadgets and lack of skill are the major problems to the use of social media communication system.

4. Conclusion

The utilization of social media by poultry farmers had direct implication on extension service delivery. The study provided an insight on the level of usage of social media platforms by poultry farmers, the perceived factors that facilitated and constrained their utilization level and found that the use of social media in the advertisement of agricultural products and services, dissemination of information were the major factors that facilitated the utilization

of social media, while epileptic power supply, inadequate network services, lack of relevant information and inability to afford gadgets were the major constrained to the utilization of social media., thus if extension agents disseminate relevant information on social media, farmer will boast production through the use of social media. The most used social media platforms by farmers in the poultry industry within the study area were watsap, youtube and facebook.

Recommendations

The following recommendations were made based on the findings:

Government and power holding companies in Nigeria should work hard to provide constant electricity in the study area. Relevant government and development agencies such as the agricultural extension unit of the federal and State ministry of agriculture should attempt to use social media platforms such as facebook, watasp and YouTube in disseminating agricultural information and also provide more information that are relevant to poultry farmers and., Government, through National Communication Commission should regulate and reduce internet access charges by network providers and ensure that there is adequate service provided by Network providers.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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