International Journal of Agricultural Science, Research and Technology in Extension and Education Systems (IJASRT in EESs)
Available online on: http://ijasrt.iau-shoushtar.ac.ir
ISSN: 2251-7588 Print
ISSN: 2251-7596 Online
2021: 11(3):163-172, DOR: 20.1001.1.22517588.2021.11.3.4.0

Received: 6 July 2021
Reviewed: 10 August 2021
Revised: 19 August 2021
Accepted: 23 August 2021

Economic Effect of Social Media on Small Scale Poultry Farmers, Evidence from Nigeria

Abraham Falola[1], Ridwan Mukaila[*2], Abisola Mary Kudabo[1]
[1]*Department of Agricultural Economics and Farm Management, University of Ilorin, Ilorin, Kwara State Nigeria*
[2]*Department of Agricultural Economics, University of Nigeria, Nsukka, Enugu State, Nigeria*
**Corresponding author email: ridwan.mukaila@unn.edu.ng*

Abstract

Social media has transformed communication and interaction of people globally, thereby impacting businesses positively. Its usage and effects on poultry farming have gained little or no attention. Thus, this study assessed the economic effect of social media on small scale poultry farmers in Nigeria. Specifically, this study identified the level of awareness of selected social media among poultry farmers, determined the level of usage of social media, assessed the profitability of poultry production and investigated the effect of social media on the profitability of poultry production. Data collected from 150 poultry farmers were analysed using descriptive statistics, gross margin and multiple regression. The results revealed that 90.7% of the farmers used social media in poultry management frequently; thus, were aware of social media. Farmers used social media to sell their products, acquire skills, obtain information on pest and disease control, and input supply. Meanwhile, the farmers faced some challenges such as poor and high cost of internet service, and poor power supply in using social media. Furthermore, poultry farming was profitable as the farmers had a gross margin of N101,875.13 ($247.60) with a profitability index of 0.96 and an operating ratio of 0.51. The use of social media increased the profitability of poultry farming business. Farming experience, education and access to credit also enhanced poultry profitability while cost of feeds and drugs reduced the profitability of poultry business. This study conclude that the use of social media plays a key role in poultry enterprise. Thus, the government has a key role to play in regulating and reducing the internet tariff plan charged by the network providers to enhance the use of ICTs in agriculture which will, in turn, enhanced profitability.

Keywords: Social media, poultry business, profitability, ICT usage, Nigeria

1. Introduction

Knowledge and information have been recognized as factors of development having become major drivers of social and economic transformation. Access to agricultural knowledge base information is critical to farmers development to maintain and increase farm productivity (Pratiwi & Suzuki, 2017). Farmers who were unable to access information and knowledge within the informal social network disseminate agricultural information and knowledge via social interaction (Conley & Udry, 2010). This is called social media in today's world. Several social media platforms such as Whats-app, Linked-In, YouTube, Twitter, Facebook, Instagram, among others, are becoming greater avenues of disseminating agricultural produce and marketing information, especially in the era of COVID-19 where people are conscious of not being infected with the virus. The outbreak has affected all aspect of life and lead to taking measures such as social distancing to curtail the spread of the disease (Bereir, 2020). The pandemic has led to the adoption of information and communication technology (ICT) by agripreneur to get relevant information, get their products marketed and contacting their customers due to the social distancing measures to curb the spread of covid-19. The ICTs is, however, a major tool used to manage agricultural activities, identify potential problems such as information asymmetry, high transaction costs in agriculture and provide solution to them (Anh et al., 2019; Mousaei

& Sayednezhad, 2021). It is also a basic strategy to achieve sustainable agricultural goals in developing countries (Jameson, 2018).

The use of social media in agriculture has gained acceptance by farmers, especially the youth, as social media encompass a wide series of websites and tools which creates an avenue for farmers. In agricultural marketing, social media usage is increasing rapidly nowadays as it allows farmers to interact with their customers directly, information sharing centres, service providers and researchers (Balkrishna & Deshmukh, 2017). Poultry farmers are using social media to improve their poultry management at each stage of production. They use ICT to get their input delivered, share price and market-related information, get their product to the end-users, and get advice from agricultural extension agents. In addition, farmers use social media to share updates regarding their poultry farming processes, market information, getting poultry products order from customers. Social media is used by farmers because it can connect consumers, agricultural experts, agribusiness and farmers spread over a geographical distance; thus, solving agricultural marketing problems (Balkrishna & Deshmukh, 2017). Farmers now create blogs on the websites, open groups on WhatsApp and telegram, create pages on Facebook, Twitter and Instagram to disseminate market information to their audience.

According to Omotesho et al. (2012), ICT has changed the face of communication, transforming the world into a global village due to its cost-effective, timely and seamless nature of information flow via various media. However, despite knowing about the role that ICT can play on small scale poultry farmers, studies have revealed a poor level of its awareness and usage among poultry in various parts of Nigeria (Adebayo et al., 2007). As poultry farmers, it is important that they should be conversant with and versatile in the use of various ICT which will eventually prove useful to them in the marketing of their poultry products. Sokoya et al. (2012) opined that agricultural researchers have a glimpse of the role that social media can play in establishing connections and facilitating the dissemination of innovative information. The seamless and instantaneous nature of communication via social media, alongside its wide adoption, therefore, positions it as a veritable tool for agricultural use.

According to Falola and Adewumi (2013), agricultural production is done largely by smallholder farmers who have little access to critical information, knowledge and skills needed to increase production, effectively process their products and better marketing system which led to low yields and incomes. Meanwhile, Arokoyo (2005) stated that the use of ICT characterised by a flawless flow of information will boost agricultural production in developing countries. Thus, means of adequate information is one of the key requirements to gain approaches and technical innovation which in turn will bring about increased agricultural productivity, increased income and alleviate poverty among food producers in developing countries. Aker (2010) opined that lack of adequate and timely information can prevent better decision making which could, in turn, lower production efficiency among farmers. Thus, social media serves as a means through which information can be pass, poultry farmers stand to gain from the opportunity.

Some previous studies focused on the use of ICT and the effect of ICT on agriculture and the farmers without any information to the poultry farmers (e.g., Ajani, 2010; Balkrishna & Deshmukh, 2017; Falola & Adewumi, 2013; Kapoor, 2014; Mousaei & Sayednezhad, 2021; Nlerum & Onowu, 2014; Omotesho et al. 2012; Pratiwi & Suzuki, 2017). Thus, this study focuses on the economic effects of social media on small scale poultry farmers. The current study differs from previous studies as it examined the social media usage in poultry production enterprise during the current pandemic. This studies, thus, added to literature in various ways. Specifically, this study identified the level of awareness of selected social media among poultry farmers, determined the level of usage of social media, assessed the profitability of poultry production and investigated the effect of social media on the profitability of poultry production. This would enable appropriate policies tailored at enhancing social media usage among farmers to improve their production activities.

2. Materials and Methods

2.1 Study Area

This research work was carried out in Kwara state, Nigeria. It is located in the north-central geopolitical zone and has sixteen Local Government Areas (LGAs). Kwara State is located between latitudes 7^0 45 ‘N and 9^0 30’ N and longitude $2^0$30’E and $6^0$25’E. The state has a population of 2,371,089 and a total land size of 3,682,500 hectares out of which only 25% is used for farming (National Population Commission, 2006). Kwara state shares a national border with Oyo state in the west, Kogi state in the east, Ondo and Osun states in the south and Niger State in the north. The State also shares an international boundary with the Republic of Benin.

2.2 Sampling Technique and Data collection

A three-stage sampling technique was employed for the study in the selection of respondents. The first stage involved the purposive selection of three LGAs (Ilorin-west, Ilorin-south and Ilorin-East) where poultry farming is predominantly carried out. At the second stage, five communities were randomly selected from each LGA. Finally, ten poultry farmers were randomly selected from each community. Thus, a total of one hundred and fifty poultry farmers have used the study. Primary data were used for this study. These were obtained with the use of a structured questionnaire coupled with an oral interview schedule conducted to elicit information from the respondents. The information collected includes their socioeconomic features, awareness and usage of social media in poultry management, constraints faced in using social media and cost and returns from the poultry business.

2.3 Data analysis

Descriptive statistics such as frequency, percentage, mean and standard deviation were used to determine the socio-economic characteristics of the farmers.

A four-point Likert rating scale was used to determine the level of social media use for poultry management. The scale was placed on each social media ranging from never (1), occasionally (2), frequently (3) and very frequently (4). The mean score (2.5) of the four-point Likert scale was used as the cut off point. The farmers were asked to indicate their level of agreement with the statement through an ordinal scale. For a given social media, the mean score was being calculated. Any social media with a mean score equal to or greater than 2.5 was considered widely used, any social media with a mean score less than 2.5 was considered less adopted or used.

The Likert rating scale was also used to analyse the various challenges faced in using social media for poultry management. The challenges were identified and weighed using a three (3) point Likert scale placed on each challenge ranging from not severe (1), severe (2) and very severe (3). A Likert mean of 2.0 was used as a cut-point for severe and not severe problems. Constraints equal to or greater than 2.0 were severe while those less than 2.0 were not severe.

Gross margin was used to calculate the profitability of poultry products. Gross margin is the difference between the total revenue and the cost of the product sold. It is expressed as:

Gross margin = Average Total Revenue (ATR) – Average Total Variable Cost (ATVC)

Average total revenue includes revenue from poultry products. Average total variable cost includes costs of variable inputs such as labour, fuel, and other variable input.

The operating ratio (OR) was used to measure the proportion of the gross income used for operating expenses.

$$\mathrm{OR} = \frac{\text{Total variable cost}}{\text{Total revenue}}$$

Return on capital invested (RI) was used to assess the gain per unit of investment, that is, the profit made per N1 invested.

$$\mathrm{RI} = \frac{\text{Gross margin}}{\text{Total variable cost}}$$

Multiple regression was used to investigate the effect of using social media on poultry business profitability. Other factors that influence the profitability were also incorporated in the model. the model is specifying as:

$$Y = \beta_0 + \beta_1 SM + \beta_2 Gen + \beta_3 EXP + \beta_4 HS + \beta_5 ED + \beta_6 A + \beta_7 TP + \beta_8 INC + \beta_9 AC + \beta_{10} C + \varepsilon$$

Where

Y is the gross margin of poultry production (Naira), SM is the use of social media, Gen is the gender of the farmer (1 = Male, 0 = female), EXP is poultry farming experience (years), HS is the household size (number of people), ED is the educational status (years), A is the age of farmer (years), TP is the type of poultry, INC is income (Naira), AC is access to credit (1 = yes, 0 = no), C is the cost of feeds and drugs, $\beta_0$is constant, β_{1-10} are coefficients and ε is the error term.

3. Results and Discussion

3.1 Socio-economic Characteristics of the Respondents

Table 1 presents the socio-economic characteristics of poultry farmers in the study area. The results show that the majority (79.3%) of the poultry farmers were male. This implies that poultry farming was a male-dominated occupation in the study area. This could be as a result of the energy-demanding nature of the venture which males are the best fit for. This supports the findings of Akanbi et al. (2020) who reported that male dominated the poultry business. The small-scale poultry farmers had an average age of 44 years. This suggests that they belong to the economically active population category which is between 25-59 years. They can therefore put more effort into poultry

farming to increase their output. This could also enhance their ability and willingness to use social media in their production and management activities. Due to the drudgery nature of small scale farming, age is important to determine the quality of labour (Mukaila et al., 2020). Thus, the poultry farmers have the energy required to give quality labour on their farms. Regarding the marital status of the poultry farmers, the majority (78.7%) were married, 18.0% are single, while those who are divorced and widowed are 2.7% and 0.7% respectively. This indicates that the majority of the farmers are likely to have dependants in their household. A larger proportion (46.7%) of the respondents had a household size between 4 to 6 persons. The mean household size was five persons. The large household size suggests that the poultry farmers are likely to enjoy family labour readily available. The farmer makes use of family labour for their activities which could reduce their operational cost in the business (Mukaila et al., 2021). The size of the family will thus reduce the amount of hired labour employed in poultry farming

Regarding the level of education, the majority (68.7%) of the farmers had tertiary education and 31.3% had secondary education. The implication of this is that the poultry farmers are likely to readily adopt new technology and innovation for poultry farming. This could also enhance their decision-making process on the use of input. A few (30%) of the farmers used a rented land/space for their poultry farming, while the land used by 70% was leased to them. The majority (79.3%) of the farmers had 6 to 15 years of poultry farming experience. The average farming experience was 10 years. This implies that the majority of the farmers had a considerate year of experience when it comes to poultry farming. The years an individual spent in a business influenced the skill acquired (Egwue et al., 2020; Obetta et al., 2020). Thus, the poultry farmers had the required skills needed in poultry farming. The majority (82%) of the farmers took poultry farming as a full-time job and 18% of the respondent took poultry farming as a part-time job which implies that the majority of the respondents depends on poultry farming as their major means of livelihood and source of income. The poultry farmers, however, had an average monthly income of N101,407.33 ($246.46). This is an indicator that poultry farming is a profitable venture. The result further shows that the majority (95.3%) of the poultry farmers did not have access to credit from either banks or co-operative to back up their poultry farming while only 4.7% had access to credit. This implies a very low level of access to credit which could affect their level of investment as the personal fund is not always enough to embark on large-scale poultry farming. This could also be the reason for their operation on a small scale. The level of extension access among the farmers was relatively high as 78% of them had access to agricultural extension services. This was as a result of the use of social media among the farmers which makes it easier for them to access agricultural extension services. The poultry system used for bird management practice by the majority (78%) of the farmers was the cage system. While 22% of them used deep litter systems as their management practice.

3.2 Purpose of using social media in poultry farming

Table 2 presents the identified 12 basic purposes of using social media in poultry farming with a weight mean score (WM) ranging from 3.15 to 3. 28. The poultry farmers used social media in their business activities for several purposes. They used social media to obtain information on pest and disease control ($\bar{x}$= 3.28). When they encounter a disease outbreak on their farm, they contact the veterinary doctor using the social media platform. They also got preventive control measures of disease from the extension agents via social media. They also used social media to obtain skills on quality certification requirements ($\bar{x}$= 3.27) for effective poultry management and production. To sell their products and contact their customers ($\bar{x}$= 3.25) was also a purpose of using social media by the farmers. The use of social media in poultry marketing and other fields of agricultural marketing offers a great opportunity for the buying and selling of agricultural commodities. Other purposes for using social media by poultry farmers were to obtain relevant information on current policies in poultry production ($\bar{x}$= 3.24), to obtain information on modern farm management techniques ($\bar{x}$= 3.23), to communicate with farm management experts ($\bar{x}$= 3.22), for skills acquisition on breed selection ($\bar{x}$= 3.21), to obtain information on market outlets and marketing ($\bar{x}$= 3.20), to obtain information on the business plan ($\bar{x}$= 3.19), to obtain information on input supply ($\bar{x}$= 3.17), and to obtain information on feed and feeding ($\bar{x}$= 3.15). This suggests a high level of awareness of social media among poultry farmers. This implies that the poultry farmers understood the role of social media in their business and social media had made their poultry management easier. Sokoya et al. (2012) also reported that farmers and agricultural researchers have a glimpse of the role that social media can play in establishing connections and facilitating the dissemination of information.

Table 1. Socioeconomic characteristics of the respondents

Variable	Category	Frequency	Percentage	Mean ± SD
Gender	Female	31	20.7	
	Male	119	79.3	
Age (Years)	≤ 30	7	4.7	
	31-40	56	37.3	43.89 ± 7.94
	41-50	63	42.0	
Min=26	51-60	20	13.3	
Max=70	> 60	4	2.7	
Marital Status	Single	27	18.0	
	Married	118	78.7	
	Divorced	4	2.7	
	Widowed	1	0.7	
Household Size	≤ 3	30	20.0	
	4-6	70	46.7	5.23 ± 2.31
	7-9	47	31.3	
	> 9	3	2.0	
Education	Secondary	47	31.3	
	Tertiary	103	68.7	
Ownership Status	Rented	45	30.0	
	Leased	105	70.0	
Experience	≤ 5	17	11.3	
	6-15	1	79.3	10.39 ± 4.15
	16-25	13	8.7	
	> 25	1	0.7	
Type	Part-time	27	18.0	
	Full-time	123	82.0	
Access to Credit	Yes	7	4.7	
	No	143	95.3	
Monthly income (N)	≤ 100,000	118	78.7	101,407.33 ± 1357.51
	100,001-200,000	11	7.3	
	200,001-300,000	3	2.0	
	> 300,000	18	12.0	
Access to extension	Yes	138	78.0	
	No	12	22.0	
Management Practices	Cage System	117	78.0	
	Deep Litter	33	22.0	

Source: Field survey, 2021

3.3 Use of Social Media for Poultry Management

Table 3 shows the different social media platforms used for poultry management. WhatsApp was widely used by poultry farmers in their poultry management. They used this most among social media for their business activities. This was followed by the use of Facebook which was the second most used social media platform for poultry management. Other widely used social media among the poultry farmers were Diggs, Zoom, Google Talk, WeChat, Skype, Craigslist, LinkedIn, YouTube, Twitter, Instagram, Blackberry messenger, telegram and Reddit. This suggests a high adoption of social media by the poultry farmers in managing their business. It however implies that social media is a key element in agricultural activities and supports farmers business positively. The wide use of social media by the farmers could be a result of their level of education and young age which enhanced their technology adoption decision.

Table 2. Purpose of using social media in poultry farming

Uses	N Frq (%)	O Frq (%)	F Frq (%)	VF Frq (%)	WS	WM
To obtain information on pest and disease control	1 (0.7)	15 (10.0)	75 (50.0)	59 (39.3)	492	3.28
To obtain skills on quality certification requirements	3 (2.0)	22 (14.7)	57 (38.0)	68 (55.3)	490	3.27
To sell their product	2 (1.3)	22(14.7)	63 (42.0)	63 (42.0)	487	3.25
To obtain relevant information on current policies in poultry production	1 (0.7)	22 (14.7)	67 (44.7)	60 (40.0)	486	3.24
To obtain information on modern farm management techniques	2 (1.3)	26 (17.3)	57 (38.0)	65 (43.3)	485	3.23
For skills on keeping basic farm records and account	3 (2.0)	20 (13.3)	67 (44.7)	60 (40.0)	484	3.23
To communicate with farm management experts	3 (2.0)	22 (14.7)	64 (42.7)	61 (40.7)	483	3.22
For skills acquisition on breed selection	3 (2.0)	27 (18.0)	56 (37.3)	64 (42.7)	481	3.21
To obtain information on market outlets and marketing	2 (1.3)	24 (16.0)	66 (44.0)	58 (38.7)	480	3.20
To obtain information on business plan	2 (1.3)	25(16.7)	65 (43.3)	58 (38.7)	479	3.19
To obtain information in input supply	6 (4.0)	19(12.7)	68 (45.3)	57 (38.0)	476	3.17
To obtain information on feed and feeding	3 (2.0)	30 (20.0)	59 (39.3)	58 (38.7)	472	3.15

N = Never, O = Occasionally, F = Frequently, VF = Very Frequent, Frq = frequency, WS=weighted score.
Source: Field Survey, 2021.

Table 3. Use of social media for poultry management

Social Media	N F (%)	O F (%)	F F (%)	VS F (%)	WS	WMS
WhatsApp	1 (0.7)	2 (1.3)	5 (3.3)	142 (94.7)	588	3.92
Facebook	0 (0)	5 (3.3)	3 (2.0)	142 (94.70)	587	3.91
Diggs	2 (1.3)	4 (2.7)	3 (2.0)	141 (94.0)	583	3.89
Zoom	3 (2.0)	2 (1.3)	5 (3.3)	140 (93.3)	582	3.88
Google Talk	2 (1.3)	5 (3.3)	14 (9.3)	129 (86.0)	570	3.80
WeChat	4 (2.7)	6 (4.0)	11 (7.3)	129 (86.0)	565	3.77
Telegram	3 (2.0)	5 (3.3)	15 (10)	127 (84.7)	566	3.77
Craigslist	6 (4.0)	7 (4.7)	4 (2.7)	133 (88.7)	564	3.76
LinkedIn	0 (0)	8 (5.3)	25 (16.7)	117 (78.0)	559	3.73
YouTube	6 (4.0)	11 (7.3)	25 (16.7)	108 (72)	535	3.57
Twitter	3 (2.0)	4 (2.7)	56 (37.3)	87 (58.0)	527	3.51
Blackberry messenger	16 (10.7)	17 (11.3)	6 (4.0)	111 (74)	512	3.41
Instagram	3 (2.0)	35 (23.3)	42 (28)	70 (46.7)	479	3.19
Skype	14 (9.3)	17 (11.3)	62 (41.3)	57 (38.0)	462	3.08
Reddit	16 (10.7)	56 (37.3)	11 (7.3)	67 (44.7)	429	2.86
Window live message	25 (16.7)	73 (48.7)	7 (4.7)	45 (30.0)	372	2.48

Source: Field Survey, 2021. N = Never, O = Occasionally, F = Frequently, VS = Very Strong

3.4 Level of social media usage for poultry management

Table 4 shows the level of use of social media for poultry management and the results shows that the majority (90.7%) of the farmers fall into High (>3.0) categories who are making great use of the social media for the management of their poultry farm, while 9.3% falls into the average users of social media for the use of poultry management. This indicates that the majority of the poultry farmers were already making good use of social media for their poultry farming. This could enhance their access to relevant information, the decision-making process and marketing their products.

3.5 Costs and return of poultry production

The costs and return of major products from the poultry farm in the study area were presented in Table 5. The results revealed a total revenue of N207,625.86 ($504.62) from 133 chickens per production cycle of two months (due to large proportion of broiler production in the venture). Thus, it took eight to nine weeks for broiler to reach market size in the study area. The total cost of N105,750.73 ($257.02) was recorded in the business. A gross margin of N101,875.13 ($246.46) was realised in the poultry enterprise. This implies that the poultry venture was profitable. The return from capital investment or profitability index was 0.96 which further shows that the enterprise was profitable. This implies that for every naira (N1) invested in poultry production, N0.96 was realised as profit by the poultry farmers. The operation ratio was 0.51. This implies that 51% of gross income was used as operating expenses in poultry farming. It is worth noting that the cost of feed is the highest variable cost in poultry production as it accounted for 60.9 per cent.

Table 4. Level of use of social media for poultry management

Variable	Categories	Frequency	Percentage	Mean ± SD
Level of Use	Low (<2.0)	0	0	
	Average (2.0-3.0)	14	9.3	3.53 ± 0.37
	High (> 3.0)	136	90.7	

Table 5. Costs and return of poultry production

Variables	Value (₦)
Returns from Layers	21,723.33
Returns from Broilers	136,690.00
Returns from Cockerel	1,633.33
Returns from Guinea fowl	1,480.00
Returns from Egg	44,519.20
Returns from Duck	1,580.00
Total Revenue (A)	207,625.86
Cost of Feed	64,355.33
Cost of drugs	6,098.67
Cost of water	1,495.33
Cost of charcoal	4,184.67
Cost of data	2,556.67
Depreciation on Possession of phone/laptops or tablets	66.73
Cost of chicks	12,240.00
Labour cost	10,253.33
Cost of drinkers	4,500
Total Cost (B)	105,750.73
Gross margin (C) = A - B	101,875.13
Operation ratio = B/A	0.51
Return on capital invested= C/B	0.96

Source: Survey, 2021.

3.6 Challenges in using social media for poultry management

Table 6 presents the identified major challenges faced by poultry farmers when using social media for poultry management. High internet subscription charged by network providers ($\bar{x}$ = 2.54) was ranked first among the

constraints faced in using social media. Farmers disclosed that they spent a minimum of N2,500 ($6.08) per month to access the internet for them to use social media. This finding supports the results of Ajani (2012) that the high cost of the internet affected the use of ICT. Poor access to telecommunication or internet services ($\bar{x}$ = 2.44) was the second major constraint faced in using social media for poultry management. Poultry farmers complaint about poor internet networks which at times disrupted the use of social media. This was followed by the high cost of ICT or financial constraints ($\bar{x}$ = 2.39). The cost of procuring mobile phones used in social media was reported to affect social media usage negatively, especially when their phone got missing or stolen. Poor power supply ($\bar{x}$ = 2.29) in the farm area was also a constraint as farmers make use of the generator in charging their phones which add additional cost on them. Ajani (2012) reported a similar result that poor electricity is a major challenge to the use of ICT.

Poor technical knowledge ($\bar{x}$ = 1.81), language barrier ($\bar{x}$ = 1.77) and moral/religious beliefs ($\bar{x}$ = 1.11) were however not a severe constraint in using social media among the poultry farmers. This was evident by the Likert means lesser than the average cut point of 2.0. This could be related to their educational status and youthful age which makes them communicate in the official language (English) with their customers and have knowledge about the use of ICT.

3.7 Effects of social media on the profitability of poultry farming business

The results of multiple regression used to ascertain the effect of using social media on the profitability of poultry business among the small-scale farmers were presented in Table 7. The result also contained the effects of some other variables on the profitability of the poultry business. The coefficient of the variable of interest, use of social media, was positive and significant in relation to poultry farming profitability at one per cent. This suggests that an increase in the use of social media in the poultry farming business will increase the profitability of the venture. This implies that social media is an enhancing factor to poultry business profitability. Thus, farmers who used social media always are likely to make more profit than their counterparts who did not use social media. This is because social media enhanced farmers ability to sell their products and get access to innovative information. Considering the current covid-19 crisis where consumers had reduced their visit to markets, the use of social media makes it possible for consumers to place orders from their comfort zone via social media and the farmers were able to get in touch with their customers.

Farming experience had a positive and significant influence on poultry profitability ($p<0.1$). This implies that a farmer with a high level of experience would make more profit in the business than those with a low level of experience. This is because the knowledge and skill needed in an enterprise or business increase as the years spent in the business increase. The education level of the poultry farmers had a positive and significant effect on poultry business profitability ($p<0.01$). This implies that a well-educated poultry farmer makes more profit than their counterpart who had little or no formal education. This is because education paves ways for access to the right information, adoption of innovation and better decision making. The age of farmers had a negative influence on poultry profitability ($p<0.1$). This could be because older farmers are risk-averse when it comes to adopting ICT or social media because of their little technical know out.

Access to credit by poultry farmers had a positive and significant effect on poultry business profitability ($p<0.01$). This implies that poultry farmers who had access to credit facilities make a higher profit while those that could not access credit had a low profit. This is because credit serves as capital needed to invest in the poultry business. Thus, the higher the investment in poultry farming, the higher the profitability, *ceteris paribus*. The cost of feeds and drugs had a negative and significant effect on poultry farming profitability ($p<0.01$). This implies that the higher cost of feeds and drugs reduced the profitability of the venture.

Table 6. Challenges in using social media for poultry management

Challenges	Not Severe Frq (%)	Severe Frq (%)	Very Severe Frq (%)	WS	WMS
High data subscription charges	12 (8)	45 (30.0)	93 (62.0)	381	2.54
Poor access to internet services	13 (8.7)	58 (38.7)	79 (52.7)	366	2.44
High Cost of ICT (Financial Constraint)	12 (8)	68 (45.3)	70 (46.7)	358	2.39
Poor power supply	17 (11.3)	73 (48.7)	60 (40.0)	343	2.29
Poor technical knowledge	57 (38)	65 (43.3)	28 (18.7)	271	1.81
Language Barrier	70 (46.7)	45 (30.0)	35 (23.3)	265	1.77
Moral/religious beliefs	139 (92.7)	6 (4.0)	5 (3.3)	166	1.11

Source: Field Survey, 2021.

Table 7. Effect of the use of social media on the profitability of poultry farm

	Coefficient	Std. Error	t-value	p-value
Use of social media	0.401***	0.086	4.686	0.000
Gender	-0.014	0.065	-0.214	0.831
Farming experience	0.009*	0.005	1.690	0.093
Household size	-0.015	0.017	-0.870	0.386
Education	0.341***	0.062	5.474	0.000
Age	-0.013*	0.008	-1.707	0.090
Type of poultry	0.039	0.038	1.021	0.309
Income	-9.198E-9	0.000	-0.035	0.972
Access to credit	0.428***	0.145	2.941	0.004
Cost of feeds and drugs	-0.000244***	0.000061	-4.016	0.000
Constant	4.856	0.322	15.066	0.000

$R^2 = 0.355$, Adjusted $R^2 = 0.309$, F = 7.604
*Significant at $p < 0.10$, **Significant at $p < 0.05$), ***Significant at $p < 0.01$
Source: Field Survey, 2021.

4. Conclusion and Recommendations

This study focused on the use of social media in poultry farming and its economic effect on poultry farmers. The study revealed that the poultry farmers were high social media users who are making great use of the social media for the management of their poultry farm. The major challenge faced by farmers in using social media were poor access to internet service, high cost of ICT, high internet subscription and poor power supply. Poultry farming was a profitable venture as the farmers had a gross margin of N101,875.13 ($246.46) with a profitability index of 0.96 and an operating ratio of 0.51. The use of social media increased the profitability of poultry farmers. Thus, social media improved the economic status of farmers. Farming experience, education and access to credit enhanced poultry profit while the age of farmers and cost of feeds and drugs inhibit the profitability of the poultry business. The study recommends that the government, through National Communication Commission, should regulate and reduce the internet tariff plan charged by the network providers to enhance the use of ICTs in agriculture which will, in turn, enhanced profitability. The creation of awareness to other farmers on the importance of using social media is needed by the agricultural extension agents. Also, the provision of credit by the government and financial institutions to the farmers at affordable interest rates is important to increase social media usage and profitability of poultry farming. This study suggests that future study can look at investigating the effect of social media on crop farmers profitability and their wellbeing.

References:

1. Adebayo, E. L & Adesope, O. M. (2007). Awareness, access and usage of information and communication technologies between female researchers and extensionists. *International Journal of Education and Development Using Information and Communication Technology, 3*(1), 85-93.

2. Ajani, E. N. (2010). Constraints to effective use of information communication technologies (ICTs) among small-scale farmers in Anambra State, Nigeria. *International Journal of Agricultural Science, Research and Technology*, *2*(3), 117–122.

3. Akanbi, O. S.-U., Oloruntola, D. S., Olatunji, S. O., & Mukaila, R. (2020). Economic analysis of poultry egg production in Kwara State, Nigeria. *Journal of Economics and Allied Research*, *4*(3), 57–71.

4. Aker, J. (2010). Information from markets near and far: mobile phones and agricultural markets in Niger. *American Economic Journal: Applied Economics, 2*, 46-59.

5. Anh, N.H., Bokelmann, W., Thuan, N.T., Nga, D.T., & Minh, N. V. (2019). Smallholders' preferences for different contract farming models: empirical evidence from sustainable certified coffee production in Vietnam J. Sust., 11 (14) 1-26. https://doi.org/10.3390/su11143799.

6. Arokoyo, T. (2005). ICTs application in agricultural extension service delivery. In: Adedoyin S.F. (ed) Agricultural Extension in Nigeria. Ilorin: Agricultural Extension Society of Nigeria.

7. Balkrishna, B. B., & Deshmukh, A. A. (2017). A Study on role of social media in agriculture marketing and its scope. *Global Journal of Management and Business Research: E-Marketing*, *17*(1), 1–5.

8. Bereir, A. M. (2020). Impact of COVID19 on Sudan agriculture: The role of agricultural extension during the pandemic era. *International Journal of Agricultural Science, Research and Technology in Extension and Education Systems, 10*(1), 43–49.

9. Conley, T. G. & Udry, C. R. (2010). Learning about new technology; pineapple in Ghana. *American Economic Review*, 100(1), 35-69.

10. Egwue, O. L., Agbugba, I. K., & Mukaila, R. (2020). Assessment of rural households food insecurity during covid-19 pandemic in South-east Nigeria. *International Journal of Research -GRANTHAALAYAH*, *8*(12), 182–194. https://doi.org/10.29121/granthaalayah.v8.i12.2020.2713.

11. Falola, A. & Adewumi, M. O. (2013). Impact of mobile Telephony on technical efficiency of farmers in Nigeria. *Journal of Sustainable Development in Africa*, *15*(6), 86-100.

12. Jameson, B.A. (2018). Cultural difference and information technology acceptance. Proceedings of the 7th Annual Conference of the Southern Association for Information Systems. Savannah, Georgia, USA, February 27-28, pp 156-161.

13. Kapoor, R. T. (2014). Application of information and communication technology for dissemination of agricultural information among farmers: challenges and opportunities. *International Journal of Agricultural Science, Research and Technology in Extension and Education Systems*, *4*(2), 83–91.

14. Mousaei, M., & Sayednezhad, M. A. (2021). The impact of information and communication technology on agricultural systems and the transition to food stability and security (case study: Agricultural Jihad Organization, Khuzestan Province. *International Journal of Agricultural Science, Research and Technology in Extension and Education Systems*, *11*(1), 41–53.

15. Mukaila, R., Falola, A., & Omotesho, O. A. (2020). Food security status: its drivers and coping strategies among vegetable farming households. *Cercetări Agronomice În Moldova*, *53*(4), 414–425. https://doi.org/10.46909/cerce-2020-035

16. Mukaila, R., Obetta, A. E., Awoyelu, F. E., Chiemela, C. J., & Ugwu, A. O. (2021). Marketing analysis of vegetables: the case of carrot and cucumber marketing in Enugu State, Nigeria. *Turkish Journal of Agriculture - Food Science and Technology*, *9*(2), 346–351. https://doi.org/https://doi.org/10.24925/turjaf.v9i2.346-351.4000

17. National Population Commission. (2006). *Population Figures*. Abuja (FCT): NPC.

18. Nlerum, F. E., & Onowu, E. O. (2014). Information communication technologies in agricultural extension delivery of Agricultural Transformation Agenda. *International Journal of Agricultural Science, Research and Technology in Extension and Education Systems*, *4*(4), 221–228.

19. Obetta, A. E., Achike, A. I., Mukaila, R., & Bala Taru. (2020). Economic analysis of marketing margin of banana and plantain in Enugu state, Nigeria. *African Journal of Agriculture and Food Science*, *3*(4), 52–62.

20. Omotesho, K. F., Ogunlade, I. & Muhammad-Lawal, A (2012). Assessment of access to information and communication technology among agricultural Extension officers in Kwara state, Nigeria, *Asian Journal Agricultural and Rural Development*, 2(2), 220-225

21. Pratiwi, A., & Suzuki, A. (2017). Effects of farmers' social networks on knowledge acquisition: lessons from agricultural training in rural Indonesia. *Journal of Economic Structures*, *6*(8), 1–23. https://doi.org/10.1186/s40008-017-0069-8

22. Sokoya, A. A., Onifade, F.N. & Alabi, A. O (2012). Establishing connections and networking: The role of social media in agricultural research in Nigeria. Paper presented at the 28th IFLA general conference and assembly.