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Farmers' utilization of social media to access agricultural information

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Abstract

This study examined how farmers utilize social media to access agricultural information. A snowball sampling technique was employed to obtain 182 out the targeted 1,000 respondents, and data were collected using a Google Form questionnaire. The responses were analyzed using both descriptive and inferential statistics. Results reveal that, farmers primarily used WhatsApp and Facebook to access agricultural information, whereas platforms like Twitter, Instagram, and Telegram were used less frequently or not at all. The main types of accessed information included agricultural inputs, livestock production, market information, pest and disease management, agricultural finance, crop production, and value addition. The identified key challenges were limited search skills, poor network connectivity, lack of content quality control, insufficient power supply, and data cost. A negative relationship was observed between the age and social media utilization. In conclusion, social media plays a significant role in farmers' access to agricultural information, although its effective use is affected by the platform preference, user age, and infrastructural limitations.

Keywords: agricultural information; farmer; social media; utilization

INTRODUCTION

Social media is a contemporary channel of digital communication which is composed of various evolving tools for discussion, interaction and sharing of information among people (Barau & Afrad, 2017). Social media has become a powerful tool that connects millions of people globally. It is now a mainstream form of communication around the globe, continuously growing in popularity with high increase in the number of smart phones and access to data networks. The power of social media lies in its features, which enable a wide range of applications that facilitate interactions between people (Chui et al., 2012). It eliminates the limitations of geographical distance, allowing users to access groups and pages where they can obtain information.

Farmers in different geographical locations are increasingly embracing social media as part of their agricultural practice. In India, Malik & Ansari (2024) found that young, better-educated farmers as more likely to use social media than older and rural farmers, who faced constrains due to low digital literacy and limited access to useful information. Social media has undoubtedly enhanced farmers' knowledge and behavior. Pattabhi et al. (2024) reported a significant improvement of farmers' knowledge after they were exposed to information disseminated by social media. Use of social media and digital literacy was positively associated with higher levels of knowledge. In Ghana, Eduafo et al. (2024) found that 57.65% of the cocoa farmers used social media for farming information, and as a result 89.38% achieved increased crop production and pest management. In Imo State, Nigeria, Abuta et al. (2024) found that farmers employed social media to identify and disseminate climate change adaptation strategies, with education level and age influencing their adoption. Also, in Nigeria,

Facebook and WhatsApp are now core to Kaduna State farmers, facilitating peer-to-peer learning and reducing the application of traditional extension services. Elkassim et al. (2024) revealed that farmers used social media to acquire agricultural information and implement farm practices. Similarly, in Ondo State, Nigeria, Fasina et al. (2024) found that majority of farmers were aware of WhatsApp, while education and farm experience positively influenced their readiness to embrace social media for obtaining agricultural information.

These platforms provide education and information on agricultural matters while also facilitating the purchase and sale of agricultural produce. The users exchange information and discuss issues concerning agriculture based on their personal experience and knowledge. They also purchase and sale agricultural produce and inputs, use pictures, links, fliers, posters and videos to facilitate the process. The sharing of information facilitates formation of farmers' networks. The social media platforms are also used in sharing links, news articles, information, feedback and queries. As agriculture systems become more complex and wider on daily basis, farmers' access to reliable, timely and relevant information sources becomes more critical. Information must be relevant and meaningful to farmers, in addition of being presented and delivered in a suitable manner (Diekmann et al., 2009). Farmers who use social media to access agricultural information experience reduced isolation. They connect and network with other farmers both domestically and globally, engage with influential figures, and follow agricultural platforms to continuously access relevant information. Iftikhar et al. (2019) believed that today's world is shaped by social media. Many platforms, including Facebook, YouTube, and WhatsApp, are becoming increasingly valuable sources of information and tools for disseminating agricultural production and promotion-related issues. The rapid expansion of social media in agricultural promotion continues to grow. In fact, YouTube has become an integral part of modern culture, serving as a new medium for learning and skill development. In this regard, Thakur & Chander (2018) reported that agriculture and social media go hand in hand. While social media serves as a platform for organization, agriculture is the subject being organized. Social media, therefore, offers farmers and individuals in other rural-based industries and opportunity for expression and interaction, facilitating continuous two-way communication.

Despite the benefits, the farmers face several constraints in utilizing social media in agricultural production. One of the primary challenges is expensive data, which has been underscored in Ghana by Eduafo et al. (2024). Elkassim et al. (2024) also indicated poor internet connectivity and costly data as constraints in Kaduna State, Nigeria. In Uttarakhand, India, Malik and Ansari (2024) emphasized the need for expert interventions—including digital literacy programs and infrastructure investment—to bridge the digital divide and empower farmers through effective use of social media.

In light of the foregoing, the present study focuses on farmers' utilization of social media to access agricultural information in Sokoto state, Nigeria. Specifically, it seeks to address to the following research questions:

i. What are the socio-economic characteristics of the farmers in the study area?

ii. How do farmers utilize social media to access agricultural information?

iii. What kind of agricultural information do farmers access on social media?

iv. How frequent do farmers use social media to access agricultural information?

v. What challenges do farmers face in accessing social media to obtain agricultural information?

MATERIALS AND METHODS

The research was conducted among farmers who use social media platforms such as Facebook, Twitter, Telegram, Instagram and WhatsApp. The study population comprised individuals who utilize these platforms to access agricultural information. The sampling procedure used for this research was snowball sampling technique. Farmers were administered questionnaire (google form) on the said platforms through referral. However, out of the targeted 1,000 respondents, only 182 questionnaires were completed and returned, forming the study sample.

The farmer utilization of social media to access agricultural information was measured using 3-point (always = 2, occasionally = 1, and not at all = 0) Likert-type scale. Respondents were requested to indicate their utilization of the platforms on the scale. Based on the scores assigned to each social media platform across the scale, frequency and percentage values were computed. Additionally, the cumulative minimum and maximum scores were used to categorize the responses as highly utilised, moderately utilised, less utilised, or not utilized.

Data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics included frequency, mean, and percent. Pearson Product Moment Correlation was used to test association between age, educational level, farm size, and annual income, and farmer utilization of social media to access agricultural information.

RESULTS AND DISCUSSION

Socioeconomic characteristics

Results in Table 1 indicate that the average age of the respondents was 29.2 years with majority (69%) falling within the 20-29 age group. In today's information age, young individuals within the observed average age group are likely to be highly exposed to social media. This agrees with Jiriko et al. (2015) who reported that, age had positive relationship with ICT utilization including social media. In terms of education, nearly all respondents (96.7%) had attained a tertiary-level qualification. A higher level of education may enhance farmers' ability to access and interpret agricultural information on social media more efficiently. However, a study by Sebotsa et al. (2020) in Njoro Sub-county, Kenya, reported contrasting findings regarding educational attainment.

More than half of the respondents (56.0%) owned no farmland, while by 25.8% had holdings up to 1.0 ha. The average farm size in the area was 0.57 ha.

Table 1. Distribution of respondents based on socio-economic characteristics (n = 182)

Variable	Frequency	Percent
Age		
15 – 29	126	69.0
30 – 49	51	28.0
50 - 59	6	3.0
Mean	**29.20**	
Educational attainment		
Secondary	6	3.3
Tertiary	176	96.7
Farm size (ha)		
Landless	102	56.0
0.5	5	2.7
1.0	47	25.8
1.5	5	2.7
2.0	23	12.6
Mean	**0.57**	

Farmers' utilization of social media to access information

The results in Table 2 indicate that the majority of respondents always used WhatsApp (72.5%) and Facebook (59.3%). Twitter was used occasionally by 36.8% or not at all by 35.7%, while Instagram was used occasionally by 46.2% or not at all by 39.0%. Telegram was not used at all by 51.1% of respondents. These findings are consistent with those reported by Moruppa & Ijabula (2021).

Table 2. Distribution of respondents based on social media utilization (n = 182)

Variable	Always	Occasionally	Not at all
Facebook	107 (59.3%)	71 (39.0%)	3 (1.6%)
Twitter	50 (27.5%)	67 (36.8%)	65 (35.7%)
WhatsApp	132 (72.5%)	40 (22.0%)	10 (5.5%)
Instagram	27 (14.8%)	84 (46.2%)	71 (39.0%)
Telegram	17 (9.13%)	72 (39.6%)	93 (51.1%)

Figure 1 presents cumulative data on farmers' utilization of social media to access agricultural information. The results show that social media platforms were largely either moderately (48.9%) or highly (33.4%) utilized for this purpose. Although social media remains a relatively new source of information for farmers – particularly those in rural areas or those seeking to expand their production – it is gaining traction as a valuable tool for agricultural engagement.

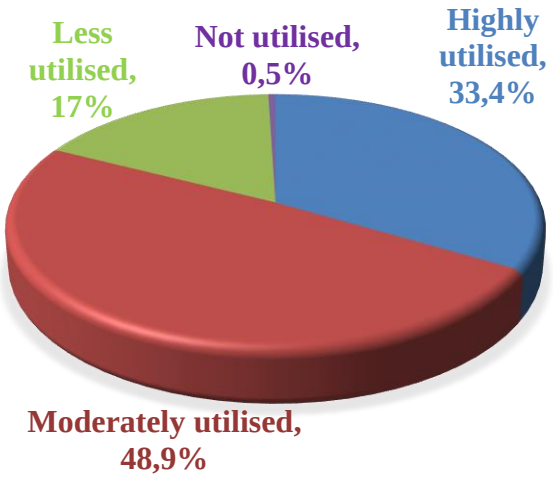

Figure. 1. Distribution of the respondents based on utilisation of social media to access agricultural information (n = 182)

Type of information accessed on social media

As displayed in Table 3, respondents in the study area access agricultural information on social media primarily related to agricultural inputs (43.4%), livestock production (38.5%), market information (37.9%), pest and disease management (33.5%), agricultural finance (28.5%), crop production (25.3%), value addition (15.9%), postharvest management (5.5%), and agricultural waste recycling (4.3%). The results are similar to the findings of Njelekela & Sanga (2015) from Tanzania.

Table 3. Distribution of respondents based on agricultural information accessed on social media (n = 182)

Variable	*Frequency	Percent
Agricultural input	79	43.4
Crop production	46	25.3
Livestock production	70	38.5
Market information	69	37.9
Value addition	29	15.9
Agricultural finance	52	28.5
Pest and disease management	61	33.5
Postharvest management	10	5.5
Agricultural waste recycling	8	4.3

Legend: ***Multiple response**

Frequency of social media utilisation to access agricultural information

According to respondents, the frequency with which they use social media to access agricultural information is primarily routine, with the majority accessing these platforms either weekly (37.4%) or daily (33.0%) (Fig. 2). This indicates that a considerable percentage of farmers rely on social media as a valuable source of agricultural information, affirming its relevance in today's agricultural sector. Interestingly, a smaller yet significant portion of respondents (18.1%) reported using social

media for agricultural information on a monthly basis. Additionally, 11.5% indicated accessing such information every hour. These varying frequencies reflect the diverse ways in which farmers engage with social media to stay informed about agricultural trends, practices, and innovations, thereby influencing their farming decisions.

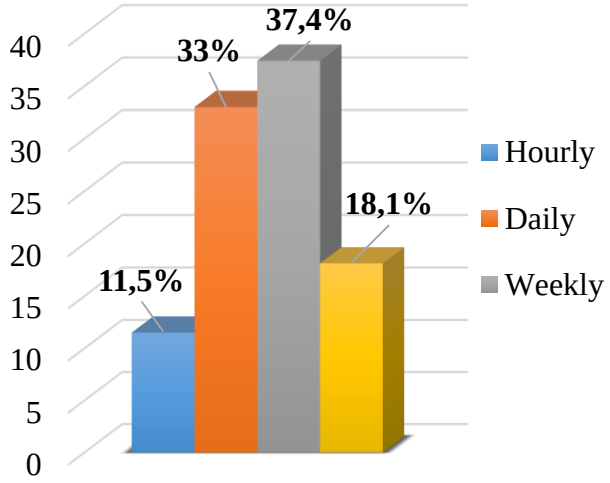

Figure 2. Distribution of respondents based on frequency of social media use to access agricultural information (n = 182)

Challenges faced in utilizing social media to access agricultural information

Results indicate that respondents faced a range of challenges while using social media to source agricultural information (Fig. 3). Prominent among these were inadequate searching skills (28.57%), poor network connectivity (22.0%), lack of quality control (16.48%), inadequate power supply (12.1%), and the cost of data (11.54%). Additionally, 9.34% of respondents reported experiencing account hacking while accessing agricultural information on social media. Similar findings were reported by Sokoya et al. (2012) as limiting factors in the use of social media as an information source.

Association between age, educational attainment and farm size, and farmers' utilisation of social media to access agricultural information

The results in Table 4 reveal that age was significantly and negatively associated with farmers' utilization of social media to access agricultural information (r = –0.185). This implies that younger farmers make greater use of social media for agricultural information compared to older farmers. These results contrast with those of Jiriko et al. (2020), who reported a positive relationship between age and the ability to use ICTs, including social media. Conversely, educational attainment and farm size were not found to be significantly associated with the utilization of social media for accessing agricultural information.

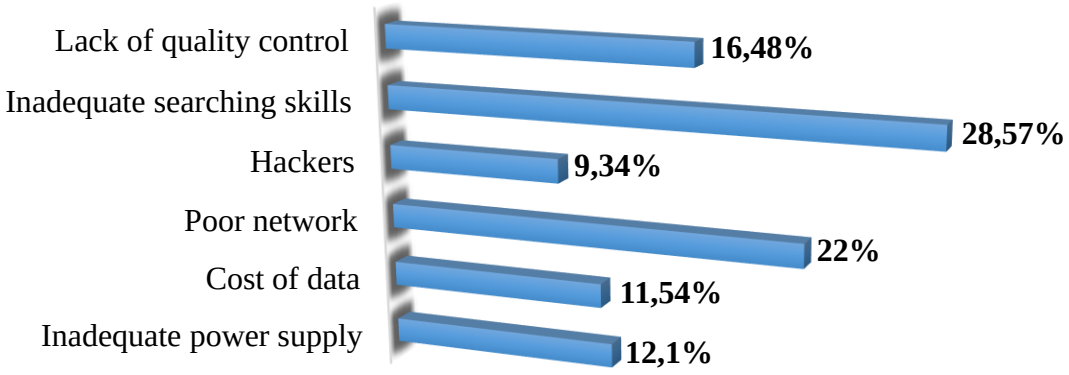

Figure. 3. Distribution of respondents based on challenges faced while accessing agricultural information on social media (n = 182)

Table 4. Association between utilization of social media to access agricultural information and age, educational level, and farm size

Variable	Correlation coefficient	*p*-value	Remark
Age	-0.185	0.012	Significant
Educational level	0.059	0.426	Not significant
Farm size	0.010	0.896	Not significant

CONCLUSIONS

Social media arises as a vital tool for communication, dissemination, and obtaining agricultural information with expansive coverage within a short time. Based on the results from the present study can be concluded that farmers commonly use social media platforms such as WhatsApp and Facebook frequently, whereas farmers infrequently utilize Twitter and Instagram. The majority of information accessed is focused on agricultural inputs, animal production, market details, pest and disease management, farm finance, crop production, and value addition. The majority of the farmers are in their 30s with a tertiary level of education. Despite the various benefits of social media utilisation farmers face a number of challenges, including inadequate search abilities, slow internet speeds, lack of quality control on content, poor power supply, and high data costs. Also, usage of social media decreases with age.

Increasing farmers' access to quality agricultural information on social media should be a key objective of future programs. These initiatives should enhance digital literacy through short-term training, provide simple guidelines for identifying credible sources, and establish peer-to-peer networks for sharing best practices. Government departments, NGOs, and private extension service providers should collaborate to strengthen infrastructure support, subsidize data costs, and develop localized, credible content tailored to farmers' needs. Such efforts can significantly enhance the role of social media in agricultural knowledge sharing and sustainable development

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