



Access and Utilization of Social Media-Based Agricultural Extension Information among Youth Farmers in Taraba State, Nigeria

Stephen Victor Gana^{a*}, Daniel Omegbe Ekharefo^b, & Ezekiel Segun Asemah^c

^aDepartment of Mass Communication, Glorious Vision University, Ogwa, Edo State, Nigeria

^bDepartment of Mass Communication, University of Benin, Edo State, Nigeria

^cDepartment of Mass Communication, Glorious Vision University, Ogwa, Edo State, Nigeria

*Corresponding email: stephengana8@gmail.com

Abstract

This study examined access to and utilisation of social media-based agricultural extension information among youth farmers in Taraba State, Nigeria. The study employed a descriptive survey research design, with a population frame of youth farmers registered with Taraba State Agribiz Gazette (2024). A sample of 286 respondents was selected using Taro Yamane's formula. Data were collected through a structured questionnaire and analysed using descriptive statistics, including frequency counts, percentages, means, and standard deviations. The findings reveal that exposure to agricultural extension information via social media platforms, is moderate, adoption of the information into farming practices remains limited, highlighting a gap between access and practical utilisation. Nevertheless, the study where adoption occurred it was found that the notable benefits, include improvements in crop and livestock management, enhanced knowledge of soil and fertiliser practices, access to market opportunities, and strengthened networking with peers and extension agents. Key challenges associated with adoption of the information via the platforms include high data costs, poor internet connectivity, inconsistent electricity supply, limited digital literacy, and concerns over misinformation and content credibility. To enhance the effectiveness of social media-based extension services, the study recommends that government agencies and telecommunication providers improve rural internet coverage and affordability; agricultural extension agencies leverage dominant platforms with visually engaging, locally relevant content; targeted digital skills training be provided to youth farmers; structured online forums be established for peer-to-peer learning and mentorship; and social media channels be clearly branded and verified to improve credibility.

Keywords: Social Media, Agricultural Extension Services, Youth Farmers, Diffusion of Innovations

Introduction

Agricultural extension services have long served as a bridge between research institutions and farming communities, providing farmers with essential knowledge and practices to improve productivity. Traditionally, these services were delivered through face-to-face training, demonstration plots, field visits, and printed advisory materials. However, such approaches have struggled to keep pace with the increasing complexity of agricultural challenges and the growing number of youth farmers in regions such as Taraba State. Asagba and Iwuchukwu (2020) note that conventional extension systems are constrained by limited manpower, insufficient funding, and logistical bottlenecks, which reduce their

ability to meet the dynamic information needs of modern farmers. In recent years, both the federal government of Nigeria and state governments, including Taraba, have introduced programmes aimed at encouraging youth participation in agriculture. Initiatives such as the Youth in Agriculture Programme (YIAP), agricultural empowerment schemes, and targeted loan facilities through the Bank of Agriculture and other agencies have sought to reduce youth unemployment while boosting food production (Quadri, et al, 2024; Adesina & Favour, 2016; Donye & Gwary, 2012). In Taraba State specifically, youth farmers have been encouraged to engage in crop and livestock enterprises through training, subsidies, and access to farmland. These policy efforts underscore the recognition that youth are pivotal to the future of agriculture and rural development in Nigeria.

Youth occupy a distinctive position in agricultural transformation because of their energy, openness to innovation, and increasing digital orientation. Unlike older farmers who often depend on conventional methods, youth farmers are more likely to adopt emerging technologies and explore new markets. Digital media, especially social media platforms such as WhatsApp, Facebook, YouTube, and X (formerly Twitter), strongly appeal to this demographic due to their interactivity, visual orientation, and immediacy. Adebayo and Okunlola (2021) argue that such platforms not only facilitate real-time communication but also align with the lifestyle and social preferences of young people, making agricultural knowledge sharing more attractive and relatable. The application of social media to agricultural extension is therefore strategic to reaching youth farmers. These platforms reduce the barriers of distance and cost, allow rapid dissemination of context-specific information, and promote two-way communication between extension agents and farmers. In Taraba State, anecdotal evidence suggests that youth farmers are already substituting weak or poorly resourced extension services with self-organised digital networks. Through WhatsApp groups and Facebook communities, they exchange farming tips, market opportunities, and localized advice, thereby creating informal knowledge systems that complement or even replace traditional channels. This trend represents not only a technological shift but also a social transformation in the way agricultural knowledge is accessed and utilized.

The integration of information and communication technologies into agricultural extension is increasingly regarded as a strategic tool for rural development. Olayemi and Ogunleye (2022) argue that mobile phones and internet platforms enhance farmers' access to relevant information, reduce information asymmetry, and support more evidence-based decision-making. Nevertheless, the extent to which social media platforms are accessible, trusted, and effectively utilized by youth farmers in Taraba State remains insufficiently studied. This study therefore seeks to investigate the access and utilization of social media-based agricultural extension information among youth farmers in Taraba State.

Statement of Problem

Taraba State is endowed with vast agricultural opportunities, including yam, cassava, maize, rice and soybean production, as well as livestock and fisheries. These resources, if fully harnessed, could contribute significantly to reducing youth unemployment and improving food security. In recognition of this potential, recent efforts have been made by both the federal and Taraba State governments to encourage young people to participate in different agricultural value chains through empowerment schemes, training programmes, access to farmland and credit facilities. However, for such initiatives to yield sustainable results, youth farmers must have adequate and timely access to agricultural extension information that not only informs but also motivates them to take advantage of these opportunities. Without such access, many young people may remain unaware of existing policies and programmes, and thus fail to benefit from or contribute meaningfully to agricultural development in the state.

At the same time, patterns of information consumption among youth have shifted considerably towards social media. Platforms such as Facebook, WhatsApp, YouTube and X (formerly Twitter) have become the dominant sources of news, knowledge and interaction for young people. Recognising this trend, several government agencies, non-governmental organisations and private sector actors have

begun to adopt social media for disseminating agricultural extension services and interventions. These platforms present an opportunity to overcome some of the long-standing challenges of traditional extension systems in Nigeria, such as inadequate manpower, insufficient funding and limited geographical coverage. Yet, the extent to which social media-based extension services reach and are effectively utilised by youth farmers in Taraba State remains uncertain, raising concerns about both the credibility and the impact of the information shared through these channels. Although numerous studies have examined the role of youth in agricultural development and highlighted the importance of their engagement, very few have specifically investigated the level of access to and utilisation of digital platforms for agricultural extension in Taraba State. This gap in the body of knowledge underscores the necessity of the present study, which seeks to assess access to and utilisation of social media-based agricultural extension information among youth farmers in Taraba State.

Objectives of the Study

The study aims to investigate the access to and utilisation of social media-based agricultural extension information among youth farmers in Taraba State. The specific objectives are to:

1. Assess the extent to which youth farmers in Taraba State are exposed to agricultural extension information through social media platforms;
2. Examine the level of adoption of social media-based agricultural extension information among youth farmers in Taraba State;
3. To determine the benefits youth farmers in Taraba State derive from social media-based agricultural extension information;
4. Explore the challenges faced by youth farmers in accessing and utilising social media-based agricultural extension information.

Review of Concepts

Social Media

Social media has been widely recognised as a transformative communication tool that facilitates real-time interaction and the broad dissemination of information. According to Adebayo and Okunlola (2021), social media provides platforms through which users actively engage across diverse groups, making it a valuable resource for agricultural extension where timely access to information is critical for improving farming practices. Bello and Eneche (2022) further describe social media as participatory in nature, enabling users not only to consume information but also to generate and share text, images, and videos. This participatory dimension is particularly important in agriculture, as it allows farmers to share their experiences, innovations, and challenges while also learning from others. To Nwaoboli and Asemah (2021) social media as platforms used to exchange personal messages, ideas and information. Additionally, Okosun et al. (2023) describe social media as platforms that enable communication and information-sharing in modern society. Tanko and Musa (2023) conceptualise social media as a network of online platforms that promote connectivity, knowledge exchange, and interaction, thereby creating a digital ecosystem for agricultural knowledge-sharing. Such ecosystems strengthen the linkages between farmers, extension agents, and agricultural experts, fostering collaboration and supporting evidence-based decision-making. Yakubu and Hassan (2023) add that social media comprises web-based technologies designed for content creation and exchange, which effectively break down geographical barriers to communication. This characteristic is especially significant in rural settings, where physical access to extension services may be limited, yet the need for timely and accurate agricultural information remains pressing. In this context, social media serves not merely as an entertainment or networking tool but as an emerging instrument for agricultural development. By enabling interaction, reducing barriers to communication, and promoting peer-to-peer learning, social media platforms are increasingly positioned as strategic channels for disseminating agricultural extension information, particularly to digitally active youth farmers.

Social Media-Based Agricultural Extension Information

Social media-based agricultural extension information refers to agricultural knowledge, advice, and updates that are generated, shared, and consumed through digital platforms such as WhatsApp, Facebook, YouTube, and X. According to Adebayo and Okunlola (2021), social media provides cost-effective and efficient communication channels that make agricultural information more accessible, timely, and relevant to farmers. This kind of information plays a crucial role in bridging the knowledge gap between experts and farmers, offering practical guidance that can directly influence farming practices. Unlike conventional extension methods, which often rely on physical meetings, demonstrations, or printed bulletins, social media enables the rapid dissemination of information to large and geographically dispersed audiences.

Bello and Eneche (2022) conceptualise social media-based agricultural extension information as interactive and participatory knowledge exchange, where farmers are not only recipients of content but also contributors. Through sharing experiences, success stories, and challenges in text, images, or videos, farmers collectively enrich the information environment. This participatory nature makes agricultural knowledge more dynamic and context-specific, enhancing its relevance to local farming conditions. Tanko and Musa (2023) emphasise the immediacy of such information flows, noting that social media enables real-time updates on market prices, pest outbreaks, weather conditions, and farming techniques. This immediacy allows youth farmers, in particular, to make quick and informed decisions, improving efficiency and resilience in their agricultural enterprises. Yakubu and Hassan (2023) highlight the significance of social media-based agricultural extension information in rural areas, where traditional information delivery systems are often inadequate or inaccessible. By circulating up-to-date and locally adapted agricultural content, social media platforms help farmers to overcome barriers of distance, poor infrastructure, and limited extension staffing. Furthermore, such information strengthens the capacity of young farmers to engage with new technologies, adopt improved practices, and connect to wider markets. In this sense, social media-based agricultural extension information is not merely a communication output but a strategic development resource that enhances productivity, sustainability, and knowledge empowerment within farming communities.

Review of Empirical Studies

Several empirical studies have investigated the use of social media in advancing agricultural extension services, with a central focus on accessibility, adoption, and effectiveness. Alhassan et al. (2023) examined the implications of social media in agricultural extension service delivery in Northwest Nigeria, with an emphasis on youth engagement. Using a multi-stage sampling technique, they analysed data from 360 respondents with descriptive statistics and logit regression. Their findings revealed that socioeconomic factors such as age, sex, education, and income significantly influenced social media usage, with WhatsApp being the most prominent platform. While this study demonstrated the role of social media in reaching youth farmers, it largely highlighted socioeconomic determinants rather than evaluating how effectively such information translated into improved agricultural practices. Similarly, Alabi and Nnaji (2021) confirmed that WhatsApp was the most utilised platform among youths in Abuja, with social media offering tangible benefits for accessing agricultural information despite constraints like poor electricity supply and high internet costs. Both studies affirm the centrality of social media in extension but fall short of examining depth of utilisation or behavioural outcomes.

Other studies have focused on adoption levels and utilisation patterns across different contexts. Barau and Musa (2025), for instance, employed snowball sampling to survey 182 farmers in Nigeria and established that WhatsApp and Facebook were dominant platforms for accessing agricultural information. However, challenges such as poor connectivity, lack of digital skills, and unreliable power supply limited effective utilisation. Likewise, Adejo and Opeyemi (2019) found that while awareness of social media among youth farmers in Kogi State was high (70%), only 21.7% used these platforms for

agricultural information sourcing. Their regression results confirmed that education, farm income, and farming experience were significant predictors of social media adoption. These findings illustrate that awareness does not automatically translate into effective utilisation, as infrastructural and socioeconomic barriers persist.

The literature also points to variations in attitude and perception. Oluyaire et al. (2019) reported that farm youths in Abuja exhibited indifferent attitudes toward social media despite moderate levels of usage, suggesting that behavioural orientation influences the effectiveness of digital extension. In contrast, Moruppa and Ijabula (2021) found a more active utilisation of Facebook in Mubi South, where farmers sought information on agrochemicals and pest control, though challenges such as cost and poor infrastructure remained pronounced. Kanu (2024), through a systematic review, corroborated these insights by identifying persistent obstacles such as weak ICT infrastructure, inadequate training, and sociocultural constraints, which limit the efficacy of social media for agricultural extension in rural Nigeria. Collectively, these studies indicate that although social media platforms are increasingly embraced, their transformative potential is curtailed by structural and behavioural limitations.

Beyond Nigeria, comparative insights further contextualise the phenomenon. Mulaudzi et al. (2024) reported that smallholder farmers in South Africa had positive perceptions of social media, yet agricultural applications remained minimal, largely confined to marketing rather than knowledge sharing. Similarly, Almasi et al. (2023) in Tanzania established that WhatsApp was the dominant platform among small-scale chicken farmers, with usage influenced by perceived usefulness, motivation, and smartphone ownership. Despite high adoption, behavioural and contextual factors, including complexity and facilitating conditions, limited the efficiency of use. These cross-national findings reinforce the conclusion that while social media has become a key medium for agricultural extension, its effectiveness depends on more than access: skills, infrastructure, and trust in digital content remain decisive.

The reviewed literature above indicates a consistent trend of investigating social media's role in agricultural extension, with emphasis on access, adoption, and the socioeconomic determinants of usage among farmers, particularly youths, across Nigeria and parts of Africa. Most studies highlight WhatsApp and Facebook as dominant platforms while identifying challenges such as poor infrastructure, high data costs, low digital literacy, and inadequate content tailoring. Despite these insights, a critical gap remains in empirically establishing how youth farmers in under-researched areas such as Taraba State access, utilise, and translate social media-based extension information into improved farming practices and livelihood outcomes. Existing scholarship often measures awareness and patterns of use but pays little attention to utilisation intensity, credibility of content, and the actual implications for agricultural productivity and youth empowerment. This gap is significant because addressing it will not only extend the discourse on digital extension but also align with Nigeria's agricultural transformation agenda and global development priorities. Specifically, by focusing on youth farmers in Taraba State, this study directly contributes to policy debates on reducing rural unemployment, promoting agripreneurship, and advancing Sustainable Development Goals (SDGs) 2 (Zero Hunger), 8 (Decent Work and Economic Growth), and 9 (Industry, Innovation, and Infrastructure).

Theoretical Framework

The Diffusion of Innovations Theory is the framework guiding the current study. The theory was developed by Everett M. Rogers in 1962 (García-Avilés, 2020). The theory explains how new ideas, practices, or technologies spread within a social system over time, with adoption shaped by factors such as relative advantage, compatibility, complexity, trialability, and observability. It further categorises adopters into innovators, early adopters, early majority, late majority, and laggards, emphasising that diffusion is not uniform but a socially mediated process influenced by communication channels and

system characteristics (Mbatha, 2024). The relevance of this theory lies in its capacity to explain the differential levels of access and utilisation of digital agricultural extension information by youth farmers in Taraba State. Being more technologically inclined, many youth farmers may function as early adopters who quickly integrate social media-based information into their farming practices, thereby improving productivity and market competitiveness. However, adoption is uneven, with barriers such as digital illiteracy, poor internet infrastructure, and low trust in online content potentially slowing uptake among some segments. The theory underscores that innovations are more readily adopted when benefits are visible and reinforced through credible and interactive channels. Social media, by enabling peer-to-peer learning, visual demonstrations, and real-time feedback, enhances both the observability and trialability of agricultural innovations. This makes it particularly strategic for engaging youth farmers, whose information consumption patterns are increasingly digital. Thus, the theory offers a robust framework for analysing how social media facilitates or constrains access to and utilisation of agricultural extension information in Taraba State, while also informing the design of more effective digital extension strategies.

Research Methods

The study adopted a descriptive survey research design, quantitative in nature, to systematically examine access and utilisation of social media-based agricultural extension information among youth farmers in Taraba State. The target population comprised registered youth farmers aged 18–35 years, as documented in the *Taraba State Agribiz Gazette* (2024), given their higher propensity to adopt digital innovations in farming. A sample of 286 respondents was determined using Taro Yamane’s (1967) formula to ensure representativeness across selected Local Government Areas that reflect the state’s diverse agricultural zones. Data were collected through a structured questionnaire while data analysis employed descriptive statistics, including frequency count, simple percentages, mean and standard deviation, with a cut-off point of 2.50 used to determine levels of agreement.

Data Presentation

Table 1: Demographic Characteristics of Respondents

Demographic Variable	Response	Frequency (f)	Percentage (%)
Age (years)	18–22	72	25.2
	23–27	88	30.8
	28–32	79	27.6
	33–35	47	16.4
Gender	Male	163	57.0
	Female	123	43.0
Educational Level	No formal education	18	6.3
	Secondary school	94	32.9
	National Diploma/NCE	81	28.3
	Bachelor’s degree & above	93	32.5
Farming Experience	Less than 5 years	105	36.7
	5–9 years	89	31.1
	10 years and above	92	32.2

Source: Field Survey, 2025

The demographic characteristics of the respondents directly strengthen the relevance of this study on access and utilization of social media-based agricultural extension information among youth farmers in Taraba State. The predominance of respondents within the 23–32 age range (58.4%) highlights a digitally active and innovation-prone group, aligning with Rogers’ Diffusion of Innovations Theory that identifies youth as early adopters of technology. The relatively high literacy level where 60.8% of respondents possess post-secondary education further suggests that the majority have the skills necessary to navigate social media platforms for agricultural purposes. The notable participation of women (43.0%) underscores the inclusiveness of social media-based extension and its potential to

address gender disparities in information access. Furthermore, the distribution of farming experience indicates a healthy mix of novices and seasoned farmers, creating opportunities for knowledge transfer and peer-to-peer learning within online communities. These demographic trends imply that the sampled population is well positioned to engage with, adopt, and benefit from digital extension innovations, thereby validating the importance of investigating how social media platforms are accessed and utilized for agricultural information in the state.

Research Objective 1: Assess the extent to which youth farmers in Taraba State are exposed to agricultural extension information through social media platforms

Table 2: Extent of Exposure to Agricultural Extension Information via Social Media Platforms among youth Farmers in Taraba State

Level of Exposure	Frequency (f)	Percentage (%)
High Exposure	20	7.0
Moderate Exposure	112	39.2
Low Exposure	96	33.6
Rarely	58	20.3
Total	286	100

Source: Field Survey, 2025.

Table 2 reveals that youth farmers in Taraba State generally exhibit modest levels of exposure to agricultural extension information through social media platforms, with the majority falling within the moderate (39.2%) and low (33.6%) categories. Only a small proportion of respondents (7.0%) reported high exposure, suggesting that while social media has become an avenue for agricultural information, its utilisation remains limited in intensity. Furthermore, a considerable number of respondents (20.3%) indicated that they rarely access such information, underscoring the uneven diffusion of digital extension services across the farming population. These findings imply that although social media platforms are increasingly recognised as channels for agricultural extension, their full potential to deliver consistent and impactful information to youth farmers in Taraba State is yet to be realised.

Table 3: Dominant Social Platforms for Accessing Agricultural Extension Information among Youth Farmers in Taraba State

Social Media Platform	High Exposure	Moderate Exposure	Low Exposure	No Exposure
WhatsApp	132 (46.2)	94 (32.9)	38 (13.3)	22 (7.6)
Facebook	115 (40.2)	89 (31.1)	52 (18.2)	30 (10.5)
YouTube	76 (26.6)	102 (35.7)	63 (22.0)	45 (15.7)
Instagram	61 (21.3)	80 (28.0)	73 (25.5)	72 (25.2)
TikTok	58 (20.3)	77 (26.9)	81 (28.3)	70 (24.5)
Twitter (X)	42 (14.7)	66 (23.1)	84 (29.4)	94 (32.9)
Telegram	39 (13.6)	59 (20.6)	88 (30.8)	100 (35.0)
Others e.g blogs	30 (10.5%)	81 (28.3)	89 (31.1)	80 (28.0)

Source: Field Survey, 2025.

The results in Table 2 indicate clear variations in the extent of youth farmers' exposure to agricultural extension information across social media platforms in Taraba State. WhatsApp emerged as the most dominant platform, with a combined 79.1% of respondents reporting high or moderate exposure, followed closely by Facebook (71.3%), underscoring their centrality as primary channels of digital agricultural communication. YouTube also recorded a relatively strong level of exposure (62.3%), reflecting its appeal for visual, demonstrative agricultural content. In contrast, newer platforms such as Instagram (49.3%) and TikTok (47.2%) showed moderate but growing relevance, particularly among younger farmers who may be more inclined towards interactive and visually engaging formats. Traditional microblogging tools such as Twitter (37.8%) and messaging platforms like Telegram (34.2%) registered comparatively low levels of exposure, suggesting limited utility in this context. Others platforms which includes blogs and alternative online sources, accounted for only 25.5%

moderate-to-high exposure, highlighting their marginal role. These findings underscore the predominance of interactive and community-driven platforms such as WhatsApp and Facebook in facilitating digital extension.

Research Objective 2: Examine the level of adoption of social media-based agricultural extension information among youth farmers in Taraba State

Table 3: Respondents Opinion about the Level of Adoption of Social Media-Based Agricultural Extension Information among Youth Farmers in Taraba State

Level of Adoption	Frequency	Percentage (%)
High Adoption	48	16.8
Moderate Adoption	92	32.2
Low Adoption	109	38.1
Rarely Adopt	37	12.9
Total	286	100

Source: Field Survey, 2025.

Table 3 reveals that the adoption of social media-based agricultural extension information among youth farmers in Taraba State is generally low to moderate, with only a small proportion reporting high levels of adoption. Specifically, 38.1% of respondents indicated low adoption, while 32.2% reported moderate adoption, suggesting that although youth farmers are exposed to extension information on social media, they are yet to fully integrate it into their agricultural practices. High adoption was recorded by just 16.8% of the respondents, indicating that only a minority are actively leveraging such information for improved productivity. Meanwhile, 12.9% rarely adopt social media-based agricultural extension information.

Research Objective 3: To determine the benefits youth farmers in Taraba State derive from social media-based agricultural extension information

Table 4: Respondents opinion about the Benefits of Social Media-Based Extension Services among youth farmers in Taraba State

Statement	Mean	Std.	Decision
I have improved my planting techniques through information from social media.	3.4	0.64	Agreed
Social media has helped me manage pests more effectively.	3.3	0.61	Agreed
I learned about better crop varieties through social media platforms.	3.2	0.68	Agreed
I gained knowledge on soil management and fertiliser application through social media.	3.3	0.66	Agreed
I have accessed information on market prices and opportunities via social media.	3.4	0.62	Agreed
Social media has helped me improve livestock and poultry management.	3.2	0.70	Agreed
I have learned about available government and NGO agricultural support programmes.	3.3	0.69	Agreed
Social media has improved my knowledge of post-harvest handling and value addition.	3.1	0.72	Agreed
I connect with other farmers and extension agents more easily through social media.	3.4	0.65	Agreed

Source: Field Survey, 2025.

The results in Table 2 indicate that social media-based agricultural extension services are highly effective in enhancing multiple aspects of youth farmers' practices in Taraba State. Respondents strongly agreed that social media improved planting techniques ($M = 3.4$), pest management ($M = 3.3$), and knowledge of better crop varieties ($M = 3.2$), highlighting its role in promoting modern agronomic practices. Beyond crop production, farmers reported improved soil and fertiliser management ($M = 3.3$), livestock and poultry rearing ($M = 3.2$), as well as post-harvest handling and value addition ($M = 3.1$), which are critical for sustaining productivity. Importantly, social media was also seen as a tool for accessing market information ($M = 3.4$), learning about government and NGO agricultural programmes ($M = 3.3$), and fostering networking with peers and extension agents ($M = 3.4$).

Research Objective 5: Explore the challenges faced by youth farmers in accessing and utilising social media-based agricultural extension information

Table 3: Respondents Opinion about the Challenges of Social Media Use in Accessing Agricultural Extension Information among Youth Farmers in Taraba State

Statement	Mean	Std.	Decision
Poor internet access limits my use of social media for agriculture.	3.3	0.72	Agreed
I struggle to differentiate accurate information from misinformation online.	3.2	0.75	Agreed
The cost of data makes it difficult to consistently access content.	4.1	0.86	Agreed
The quality of agricultural messages in terms of videos and sound on social media are mostly poor and not appealing.	3.1	0.70	Agreed
Sources of agricultural extension information on social media are not well known.	3.8	0.76	Agreed
Limited digital literacy in the use of some social media platforms hinders some farmers from utilisation of social media to access useful information.	3.2	0.71	Agreed
Some social media platforms are not user-friendly for agricultural purposes but for social interaction.	3.0	0.74	Agreed
Language barriers make it difficult to understand available content.	2.1	0.49	Disagree
Inconsistent electricity supply affects access to social media for extension.	3.3	0.68	Agreed
Privacy and security concerns discourage sharing of agricultural information online.	3.0	0.72	Agreed

Source: Field Survey, 2025.

The findings in Table 3 reveal that youth farmers in Taraba State face multiple challenges in using social media for accessing agricultural extension information. The most critical constraint identified is the high cost of data ($M = 4.1$, $SD = 0.86$), which significantly limits consistent access to online content. Similarly, poor internet connectivity ($M = 3.3$, $SD = 0.72$) and inconsistent electricity supply ($M = 3.3$, $SD = 0.68$) further hinder effective utilisation of social media platforms. Respondents also agreed that misinformation ($M = 3.2$, $SD = 0.75$), limited digital literacy ($M = 3.2$, $SD = 0.71$), and the perception that some platforms are more suited for social interaction than agricultural purposes ($M = 3.0$, $SD = 0.74$) reduce the reliability of these channels for extension services. Concerns about privacy and security ($M = 3.0$, $SD = 0.72$) and the poor quality of agricultural content ($M = 3.1$, $SD = 0.70$) were also raised as barriers, while the lack of awareness of credible sources ($M = 3.8$, $SD = 0.76$) further complicates information access. Interestingly, language barriers ($M = 2.1$, $SD = 0.49$) were not perceived as a major challenge, indicating that most available content is accessible in languages farmers can understand.

Discussion of Findings

The main objective of the study was to investigate access to and utilisation of social media-based agricultural extension information among youth farmers in Taraba State. The first specific objective examined the level of exposure to this information through social media. The findings show that youth farmers in Taraba State have only modest levels of exposure to agricultural extension information on platforms such as WhatsApp and Facebook. Most respondents indicated either moderate or low exposure, while very few reported high exposure. A notable proportion also acknowledged that they rarely accessed such information, suggesting that although social media has emerged as a relevant tool for agricultural communication, its use remains unevenly distributed. This indicates that social media is yet to fully establish itself as a consistent and intensive channel for delivering extension information to youth farmers in the state.

The second objective considered the level of adoption or use of the information among the youth. The results revealed that adoption of social media-based agricultural extension information among youth farmers is generally limited. While some respondents demonstrated moderate adoption, the majority reported only low levels of integration of such information into their farming practices. High

adoption was relatively uncommon, implying that although youth farmers are aware of and engage with agricultural information on social media, they have not fully translated this exposure into widespread adoption. This points to a gap between access to information and its practical application in everyday farming. The findings align with Adejo and Opeyemi's (2019) observation in Kogi State, where awareness levels were high but actual utilisation was much lower. This suggests that while access to platforms such as WhatsApp and Facebook is widespread, their role in facilitating agricultural extension is not yet optimised. Similar to Alhassan et al. (2023), who reported WhatsApp as the dominant channel among youths, the Taraba case confirms the centrality of certain platforms but also highlights a gap in consistent agricultural engagement. The finding can be explained through the Diffusion of Innovations theory, where exposure represents the early stage of awareness but does not necessarily translate into adoption unless perceived relative advantage and compatibility are established (Mbatha, 2024). Thus, the modest exposure of Taraba youth reflects a transitional phase where innovations are visible but not yet mainstreamed into daily agricultural practices. Similarly, Adejo and Opeyemi (2019) emphasised that education and farm income were key predictors of adoption, underscoring the socioeconomic barriers that persist across regions. The finding in the study extends this by showing that even when exposure exists, adoption remains uneven, reflecting the complexity and trialability dimensions of the theory. Unlike Moruppa and Ijabula's (2021) finding in Mubi South, where Facebook was actively used for agrochemical and pest control information, Taraba youths appear more cautious. This divergence underscores Rogers' (1962) categorisation of adopters, whereby some youths may serve as early adopters while the majority in Taraba fit into the early or late majority, waiting for clearer evidence of relative advantage before committing fully.

Thirdly, the study sought to identify the benefits the youth derived from the information accessed online. It was found that social media provides substantial benefits to youth farmers in Taraba State by strengthening both crop and livestock production practices. Farmers reported that it had helped them to improve planting techniques, manage pests more effectively, and gain knowledge of improved crop varieties, soil management, and fertiliser application. Social media also enhanced their access to vital information on market opportunities, government and NGO support programmes, and improved practices in livestock rearing and post-harvest handling. Importantly, it also facilitated greater networking with peers and extension agents, underscoring its role as both a knowledge source and a platform for collaboration. The findings here are consistent with Alabi and Nnaji (2021), who found that social media offered tangible gains despite infrastructural challenges. The current study further demonstrates that social media is not only a source of agronomic information but also a platform for accessing market opportunities, government programmes, and peer-to-peer support. This broader spectrum of benefits aligns with Almasi et al. (2023) in Tanzania, where farmers highlighted perceived usefulness and motivation as drivers of adoption, though actual efficiency varied. From the perspective of the Diffusion of Innovations theory, these benefits embody the observability and relative advantage dimensions, as youth farmers can visibly link new practices learned online to increased productivity and improved livelihoods.

Furthermore, the study examined the challenges of accessing and utilising the information through social media platforms. It was found that high data costs, unreliable internet access, and inconsistent electricity supply are the major barriers, making it difficult to use these platforms consistently. Respondents also pointed to issues of misinformation, limited digital literacy, and concerns over content quality, privacy, and security, which reduce confidence in the reliability of online agricultural information. Moreover, many farmers were uncertain about credible sources of extension

information, which further constrained effective use. These findings mirror recurring themes in prior studies. For instance, Alhassan et al. (2023) and Barau and Musa (2025) similarly reported connectivity and skill deficits as barriers to utilisation, while Oluyaire et al. (2019) highlighted indifferent attitudes as a behavioural constraint. Theoretically, these challenges represent the complexity and compatibility barriers described in the Diffusion of Innovations theory, which slow down diffusion by increasing the perceived difficulty of use or reducing trust in the innovation.

Conclusion

This study has shown that while social media has emerged as a relevant and increasingly utilised channel for agricultural extension among youth farmers in Taraba State, its transformative potential remains under-realised. Exposure to agricultural information on platforms such as WhatsApp and Facebook is modest, and adoption is still limited, suggesting that access alone does not guarantee meaningful utilisation. The study therefore concludes that exposure without adoption risks creating an “information-rich but practice-poor” digital environment that does little to transform agricultural livelihoods. To move youth farmers from awareness to sustained adoption, which carries significant and clear benefits such as improved crop and livestock practices, enhanced access to market opportunities, and strengthened networks with peers and extension agents, it is critical to strengthen the relative advantage, compatibility, and observability of social media-based extension content.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Government agencies and telecommunication providers should prioritise improving internet coverage and reliability in the rural areas of Taraba State. Affordable and stable connectivity will enable youth farmers to access social media-based agricultural extension information consistently, reducing the digital divide and fostering sustained adoption.
2. Agricultural extension agencies in Taraba State should leverage the strengths of dominant platforms such as WhatsApp and Facebook while producing content that is visually engaging, locally contextualised, and easily actionable. The use of videos, infographics, and short demonstrations can enhance observability and trialability, thereby encouraging adoption among youth farmers.
3. The agencies should introduce targeted training programmes to enhance youth farmers’ digital skills, enabling them to distinguish accurate agricultural information from misinformation and to navigate social media tools efficiently.
4. Social media should be strategically employed to facilitate interaction between experienced farmers, extension agents, and youth farmers. This can be achieved through structured online forums or groups that promote the sharing of best practices, real-time problem-solving, and mentorship, thereby bridging the gap between exposure and adoption.
5. Furthermore, agricultural extension agencies in the state should clearly brand and verify their social media channels to improve trust and credibility. Establishing official handles and content certification mechanisms will mitigate misinformation and reinforce the reliability of digital agricultural communication.

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