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SOCIAL MEDIA USE FOR PROMOTING AGRICULTURAL PROGRAMMES AND INNOVATIONS AMONG STAKEHOLDERS IN NORTH-CENTRAL NIGERIA: A NARRATIVE REVIEW

[1]Aliyu Bazhi ADAMU, [2]Tiwalola Madoc OBAJULUWA PhD., [3]Godsgift Odiepirye HAROLD PhD., [4]Adewale JERRY & [5]Gbeke Michael ADIGUN

[1&2]Department of Mass Communication
The Federal Polytechnic, Ado-Ekiti
Postgraduate Student,
[1,2&3]Afe Babalola University
Ado-Ekiti, Ekiti State, Nigeria
adamu_ab@fedpolyado.edu.ng
https://orcid.org/0009-0000-1012-1779
+2348032615744
[3]Bamidele Olumilua University of Science and Technology
Ikere-Ekiti, Ekiti State, Nigeria

[4]Department of Mass Communication
The Federal Polytechnic Ado-Ekiti
Ekiti State Nigeria

[5]Department of Mass Communication
The Federal Polytechnic Ado-Ekiti
Ekiti State Nigeria

Abstract

The increasing complexity of agricultural development programmes and the growing need for rapid, inclusive and participatory information exchange have strengthened interest in the use of social media for agricultural communication. This narrative review examines the use of social media for disseminating information on agricultural programmes, policies, technologies and innovations among farmers, agricultural extension personnel, researchers, government agencies, processors, marketers, financial institutions and other stakeholders in North-Central Nigeria. Published studies, policy documents and relevant institutional reports were identified through searches of academic databases and online repositories using combinations of keywords relating to social media, agricultural extension, agricultural information, programmes and innovations. The selected literature was analysed thematically under the following themes: platforms used for agricultural communication, benefits of social media, farmer–extension interaction, adoption challenges and strategies for improving digital agricultural communication. The review indicates that WhatsApp, Facebook, and YouTube are particularly useful for sharing agricultural information, raising awareness of programmes, supporting farmer–extension interaction, promoting peer learning, and expanding access to market and technical information. However, effectiveness is constrained by poor internet connectivity, high data costs, inadequate digital literacy, unreliable electricity, language barriers, misinformation, limited institutional coordination and unequal access among older farmers, women and remote communities. The review concludes that social media should complement rather than replace face-to-face extension, radio, farmer field schools and practical demonstrations. It recommends coordinated digital-extension strategies, local-language and audio-visual content, farmer training, information verification, improved rural connectivity and systematic evaluation of communication outcomes.

Keywords: Social Media, Agricultural Programmes, Innovations, Extension Communication, North-Central Nigeria

INTRODUCTION

The evolution of social media in Nigeria has significantly reshaped how people share and access information, particularly in agricultural policies and innovations. Traditionally, agricultural extension and

policy information in North-Central Nigeria were disseminated via radio, newspapers, physical extension visits, and community meetings, methods which were often limited by distance, cost, and ineffectiveness in engaging large or dispersed farmer populations (Asak, Eke, Adeyemi, 2025). Agriculture, however, remains the cornerstone of Nigeria's economy and a vital driver of national development. Despite the diversification efforts and the growth of the oil and service sectors, agriculture still contributes significantly to employment, food security, and rural livelihoods (National Bureau of Statistics (NBS), 2022). It provides the main source of income for about 70% of the rural population (Food and Agriculture Organisation (FAO), 2021). The North Central region of Nigeria, comprising states such as Benue, Kogi, Kwara, Niger, Nasarawa, and Plateau is known as the "food basket" of the nation because of its rich agricultural output in crops such as yam, cassava, maize, rice, and soybeans (Akinbile & Nwogu, 2020).

Agricultural development in Nigeria, particularly in the North-Central region, is critically influenced by the flow of information regarding policies and innovations that shape farming practices, productivity, and rural livelihoods. Historically, traditional communication channels have played a key role in disseminating agricultural information. However, these channels have been limited in reach, interactivity, and timeliness, especially in rural and remote farming communities (Ifejika et al., 2019). Social media has evolved into a powerful ICT-based tool with great potential for knowledge sharing and collaboration in agriculture. Emerging as the latest form of digital communication, its global impact is now undeniable. It has revolutionised communication and managed to surpass traditional gatekeepers to become an integral part of millennials' lives, connecting them with the rest of the world. Although opinions about social media may differ, its significance and influence are undeniable. (Eduafo et al., 2024)

The implications of social media for agricultural communication are manifold. It provides immediacy and interactivity, overcoming the limited reach and slowness of traditional mass media (Adejo & Opeyemi, 2019). Platforms like WhatsApp and Facebook are especially popular among younger and more educated farmers, who use them to access, disseminate, and discuss agricultural policy information and innovations (Ahmad, 2022). Such platforms support the rapid viral spread of successful case studies, extension advice, and government initiatives, creating grassroots momentum for policy adoption and innovation diffusion. Nevertheless, the adoption and impact of social media are still uneven in North-Central Nigeria. Barriers include digital illiteracy, the high cost of internet data, erratic power supply, and uneven smartphone penetration, particularly among older and poorer farmers (Adejo & Opeyemi, 2019).

OBJECTIVES OF THE REVIEW

The general objective of this review is to examine the use of social media for promoting information on agricultural programmes and innovations among agricultural stakeholders in North-Central Nigeria.
The specific objectives are to:

1. Identify the social media platforms used to disseminate agricultural information in North-Central Nigeria.
2. Assess the benefits of social media for communication among farmers, extension personnel, government agencies, researchers, agribusinesses and other stakeholders in North-Central Nigeria.
3. Examine the challenges limiting the use of social media for agricultural information dissemination.

REVIEW OF RELATED LITERATURE

The Effectiveness of Social Media in Agricultural Practices

Globally, social media applications are regarded as the powerhouse of communication and the main channel for mass marketing and broadcasting (Suchiradipta & Saravanan, 2016). Social media offers major opportunities that have the power to allow millions of farmers to gain access to the same information without being prevented by geographical discrepancy and other localised constraints (Mulaudzi, Olorunfemi & Agholor, 2024; Cornelisse et al., 2011). These applications are also gaining increased use for agricultural knowledge and information brokerage. Farmers worldwide use social media because of their convenience, instant feedback, and capability to connect with farmers, extension workers, agricultural specialists, agribusinesses and consumers across different geographical areas (Singh, 2019).

Social media has emerged as a transformative tool in agricultural practices, enhancing knowledge sharing, market access, and resource efficiency. A detailed review of the literature reveals its multifaceted effectiveness in boosting agricultural outcomes. It has significantly improved technical efficiency, land productivity, and labour productivity among farmers. Empirical evidence from studies in Punjab, Pakistan,

shows that social media usage improves agricultural income by facilitating better management practices, optimising resource use, and providing access to critical information such as soil fertility management and precision farming (Hamza et al., 2025). This aligns with information diffusion theory, which posits that timely, relevant information enhances decision-making and efficiency (Rogers et al., 2014), and rational inattention theory, which explains how farmers prioritise economically valuable information (Sims, 2003).

It also enables farmers to overcome traditional barriers by providing cost-effective access to farming methods, inputs, and market information. This leads to productivity gains averaging around 12.5% and marked reductions in farming costs, as observed in Nigerian agricultural contexts (Alabi & Nnaji, 2021; Eduafo, 2024). Social media enhances marketing efficiency and sales turnover by expanding market access and networking farmers with customers and suppliers (Ramavhale, 2024). Furthermore, social media fosters technology adoption and collaboration. Farmers are increasingly using digital tools and platforms to engage with innovations like drones and mechanised spraying, promoting advanced agricultural practices (Hafeez et al., 2023).

Community building through social media encourages knowledge exchange and collective problem-solving, further empowering rural farmers (Panda, 2023). Despite these benefits, the effectiveness of social media depends on factors such as digital literacy, internet accessibility, localised content relevance, and infrastructural support. Training programmes to improve farmers' digital skills and policy measures to expand rural connectivity are critical to maximising social media's potential in agriculture (Hamza et al., 2025).

The Role of Social Media in Agricultural Practice

One of the most notable impacts of social media on agricultural is its role in disseminating knowledge and facilitating continuous learning. Platforms such as YouTube, Instagram, and Facebook have become repositories of agricultural expertise, hosting a wealth of tutorials, webinars, and informative posts. Young individuals pursuing a career in agriculture can easily access resources on diverse topics, from sustainable farming practices to precision agriculture techniques. Online communities, such as the "Young Farmers" community, provide a space for sharing experiences, asking questions, and seeking advice, fostering a culture of collaborative learning. Social media's networking potential has brought agriculture closer to the people, transcending geographical barriers. Platforms like X (Twitter) and LinkedIn allow young farmers and enthusiasts to connect with experts, researchers, and peers from across the globe. The ability to establish connections with like- minded individuals enhances opportunities for collaboration, knowledge exchange, and even cross-border agricultural projects (Kumar et al., 2023).

Various social media tools such as Facebook, X (Twitter), YouTube, LinkedIn, WhatsApp, etc. are increasingly used to share information about agricultural produce and agricultural marketing. The use of social media in agriculture is increasing rapidly nowadays. Many service provider companies are offering better facilities to farmers. Social media allows users to communicate directly with customers, service providers, information-sharing centres, etc. Farmers are using social media to improve their produce at each stage. Social media is becoming a powerful tool that connects millions of people globally. Farmers are using social media because it has the ability to connect with other farmers, agribusinesses, and agri-experts across geographical distances. To a certain extent, social media in agricultural marketing provides solutions to agricultural marketing problems.

Despite political reforms designed to improve direct access to information, agricultural extension agents, and associated advisory service providers largely focus on the adoption of new, scientifically proven technologies, with extension agents often perceived by farmers as improved technology promoters rather than as educators (Benson & Jafry, 2013; Masangano et al., 2017; Ragasa & Chiyu, 2017). The technology promotion approach has reinforced the perceptions that farmers are solely recipients of agricultural advice and not information generators or conduits (Masambuka-Kanchewa et al., 2020). Therefore, not much is known regarding the role of traditional or indigenous knowledge (IK) in promoting sustainable agricultural development in the SSA region, as well as how it is informed by policy.

ICT has given birth to faster media of communication. Social media are some of these. Unlike traditional forms of communication, social media platforms such as Facebook, Twitter, YouTube, Instagram, Snapchat, TikTok, Pinterest, Facebook Messenger, WeChat, Whatsapp, and LinkedIn, to name a few, are internet- based digital tools used for sharing and debating information (Andres & Woodard, 2018). Also, they are multimedia based, using text, audio, and video, making the information sharing process seamless and enjoyable (Baerenklau, 2018). Social media are currently faster and more effective ways of

disseminating information in various fields of endeavour (Lamidi & Gana, 2018); the Agricultural sector inclusive. In the view of Adejo and Opeyemi (2019) the agricultural industry in the majority of emerging nations is becoming more experienced and understanding. It becomes imperative for stakeholders, chiefly Agricultural Extension Workers (AEWs), to key into the world of ICT, especially social media, to engage and educate farmers on how to use modern technology for self-sufficiency. Similarly, the agricultural system of the twenty-first century is becoming more complicated, and farmers' ability to access trustworthy, timely, and relevant information sources is becoming increasingly important to their ability to compete and also help to direct them in decision-making (Kalusopa, 2005).

Additionally, the introduction of social media has opened a platform that agricultural extension officers, farmers, agricultural institutions and non- governmental institutions utilise to disseminate and exchange agricultural information. Access to internet-capable cell phones enables people to employ social media tools to connect with others who share their interests, experiences, and circumstances (Kipkurgat, Onyiego Chemwaina, 2016).

Issues Associated with the Use of Social Media for Agricultural Practices

Many farmers, especially in rural areas with limited formal education, face difficulties using social media due to a lack of digital skills and literacy. This limits their ability to find and comprehend relevant agricultural information on social media platforms, thereby hampering effective communication and knowledge sharing (Asoegwu et al., 2021). Older and less educated farmers particularly struggle, while younger and more educated farmers tend to adopt social media more readily. Limited internet connectivity, poor network access, and high costs of internet services are major constraints preventing farmers from fully utilizing social media for agricultural development. Rural areas often suffer from inadequate digital infrastructure, which creates a digital divide making it challenging for farmers to access timely weather updates, market information, and innovative farming techniques through social media. Farmers face challenges concerning the reliability and trustworthiness of agricultural information shared through social media. There is also the problem of information overload where farmers can be overwhelmed by excessive or conflicting data, making it difficult to filter and apply useful knowledge effectively in their farming practices.

Concerns related to privacy and data security are emerging as potential barriers to social media adoption, as farmers worry about the protection of their personal and transactional information shared online. Age, education level, and social context influence social media use in agriculture. Younger, educated farmers are more likely to engage with social media, while older, rural, and less educated farmers face substantial hurdles due to lack of exposure and training. Despite these challenges, social media has proven valuable in facilitating rapid dissemination of agricultural knowledge, encouraging farmer-to-farmer communication, and enabling real-time interaction. It has been shown to promote the sharing of best practices, local innovations, and new agricultural technologies that contribute to improved productivity and sustainable farming methods (Rahman et al., 2020; Akinwumi et al., 2019; Ogunlade et al., 2018).

A primary obstacle affecting social media use in Nigerian agriculture is the digital divide marked by limited internet connectivity and insufficient technological infrastructure in rural areas where most farmers are located. This divides farmers who have access to reliable internet from those who do not, restricting the latter's ability to obtain timely and relevant agricultural information such as weather forecasts, market prices, and farming techniques (Esabu et al., 2024). Furthermore, farmers have expressed the need not only for internet availability but for strengthened and reliable internet presence in their communities (Esabu et al., 2024). Many Nigerian farmers lack the digital literacy and skills needed to navigate social media platforms effectively. This affects their ability to access, interpret, and utilize agricultural information available online. Illiteracy and low formal education among farmers exacerbate this barrier, making it difficult for them to benefit fully from social media-mediated agricultural communication (Esabu et al., 2024; Asoegwu et al., 2021) Targeted training and retraining programmes for farmers have been recommended to bridge this digital literacy gap (Esabu et al., 2024).

The limited availability of agricultural content tailored to meet the specific linguistic and cultural contexts of Nigerian farmers reduces the effectiveness of social media as a communication tool. Social media content often does not adequately address the local needs or use indigenous languages, thus limiting farmer engagement and comprehension (Esabu et al., 2024). Many farmers exhibit skepticism about adopting new communication technologies like social media due to concerns about misinformation and the reliability of the advice shared online. Such mistrust compounds the challenges of social media adoption in

agricultural settings (Esabu et al., 2024). Farmers also face time constraints that limit their ability to consistently use social media for agricultural purposes. Competing demands on their time and the effort required to learn and apply new technologies further reduce the potential impact of social media platforms in agricultural communication (Esabu et al., 2024).

Recent studies further highlight that social media provides policymakers and development agencies with tools for targeted communication campaigns, digital training sessions, market facilitation, and immediate crisis responses, especially during emergencies or pest outbreaks (Adejo & Opeyemi, 2019; Ahmad, 2022). Social media can also amplify marginalised voices, improve gender inclusion in extension activities, and democratise access to innovations in the region. This study therefore seeks to examine the role of social media in the dissemination of agricultural policies and innovations in North Central Nigeria, focusing on how these platforms are used, the level of engagement among farmers, and the challenges that limit their effectiveness.

Despite growing awareness and adoption, the utilisation of social media remains uneven across the region. Youth farmers are notably more active in sourcing agricultural information from platforms such as WhatsApp and Facebook compared to older farmers who often rely on radio and extension agents (Adejo & Opeyemi, 2019). Social media's interactive and user-friendly nature helps bridge the persistent communication gap between policymakers and farmers, leading to improved understanding and perception of agricultural initiatives. However, significant challenges hinder the optimal use of social media for agricultural information flow. Connectivity issues, erratic power supply, the high cost of data, and low digital literacy among rural farmers limit the reach and impact of social media-based communication (Adejo & Opeyemi, 2019; Sokoya et al., 2012). Furthermore, the lack of tailored content and engagement strategies reduces the effectiveness of these platforms to reach diverse farming communities.

Over the years, the Nigerian government has introduced various agricultural policies aimed at modernizing the sector, increasing productivity, and ensuring sustainable rural economic development. Notable among these initiatives are the Anchor Borrowers' Programme (ABP), the National Agricultural Technology and Innovation Policy (NATIP), and the Agriculture Promotion Policy (APP), which have sought to address credit access, technology adoption, and institutional challenges in the sector. The Anchor Borrowers' Programme (ABP), initiated in 2015, has been pivotal in providing smallholder farmers with access to credit and farm inputs, especially in crop production such as rice cultivation. Studies in North-Central Nigeria demonstrate that ABP beneficiaries experience significant improvements in crop yields, with an average rice yield increase attributed to the programme's interventions (Abdullahi et al., 2024).

THEORETICAL FRAMEWORK

Digital Agricultural Communication Theory (DACT)

Digital agricultural theory is not a single, named theory with one founder, it is a cluster of conceptual frameworks that explain how digital and ICT tools transform agricultural knowledge systems, extension services, and farmer decision-making. These frameworks emerged gradually from the 1990s onward as mobile phones, internet, and digital platforms began to be used systematically in agriculture. The Digital Agricultural Communication Theory (DACT) explains how social media and other digital communication technologies are transforming the ways agricultural information is produced, shared, accessed, and used by farmers, extension agents, and stakeholders. The theory argues that agricultural communication has shifted from a predominantly top-down, expert-to-farmer model to a more networked, participatory, and decentralized system driven by digital platforms. The theory believes in the idea that digital access and inclusion are foundational. Social media platforms such as WhatsApp, Facebook, YouTube, and TikTok provide farmers especially smallholders with opportunities to overcome long-standing structural barriers related to distance, extension manpower shortages, and limited access to timely agricultural updates. Recent studies in Nigeria and South Africa show that these platforms have become critical sources of information on planting techniques, pest management, weather patterns, and market prices (GPH Journal, 2023; Nyhodo et al., 2025). The increased accessibility of digital tools has therefore expanded participation and enabled farmers to engage more actively in agricultural information networks.

A central tenet of theory is the democratisation of agricultural knowledge**.** Traditional extension systems were historically gatekept by institutions, experts, and government agencies. Digital platforms disrupt this hierarchy by enabling horizontal, peer-to-peer communication among farmers. Farmers now share practical experiences, local innovations, indigenous techniques, and problem-solving strategies in real

time. A 2025 study on South African smallholder farmers describes how WhatsApp and Facebook have become "spaces that facilitate the active participation of farmers in knowledge creation and dissemination, thereby breaking long-standing knowledge gaps" (Nyhodo et al., 2025). This kind of democratized interaction shifts the locus of expertise away from institutions alone and toward community-based dialogue.

Social Learning Theory and Its Application to Agricultural Practices

Social Learning Theory (SLT), was originally developed by Albert Bandura, it remains one of the most relevant frameworks for understanding how farmers, extension workers, and rural communities acquire and adapt agricultural knowledge in the digital age. At its core, the theory posits that individuals learn primarily by observing others, processing what they see cognitively, and imitating behaviours when the social or environmental conditions are supportive (McLeod, 2024). In agricultural settings where knowledge is traditionally passed from one farmer to another, from extension agents to farmers, and increasingly through digital platforms, the mechanisms of observational learning, modelling, and social reinforcement are central to how innovations spread and how practices evolve.

Recent researches have shown that observational learning is one of the strongest drivers of technology adoption among farmers**,** especially in developing regions. Farmers often rely on the visible success or failures of their peers before deciding to adopt new seed varieties, pest-management techniques or climate-smart farming strategies. Studies also show that farmers are more willing to change practices when they observe credible models within their social networks demonstrating positive results, rather than relying solely on written or verbal instructions (Liu et al., 2024). This reinforces SLT's assertion that attention, retention and motivation are shaped by the behaviour of others and the outcomes associated with those behaviours.

Another important dimension of Social Learning Theory (SLT) is reciprocal determinism**,** which states that behaviour, personal attributes, and environmental factors interact to influence learning. Modern studies highlight this interplay in rural agricultural communities, where environmental factors such as climate risks, access to extension services, and exposure to new technologies shape farmers' willingness to imitate observed practices (Verywell Mind, 2024). For example, in regions experiencing intensified climate change, farmers increasingly look to the models provided by early adopters of drought-resistant crops or smart irrigation systems.

METHODOLOGY

This study adopted a narrative literature review design to synthesise published evidence on the use of social media for disseminating information on agricultural programmes and innovations among stakeholders in Nigeria, with particular attention to North-Central Nigeria. A narrative design was considered appropriate because the available studies differ in geographical coverage, research design, sample characteristics, social media platforms examined and outcome measures. Relevant literature was obtained from peer-reviewed journal articles, academic books, conference papers, government publications, policy documents, institutional reports and credible online databases. The search covered studies on social media, agricultural extension, agricultural information dissemination, agricultural programmes, agricultural innovations, farmers and digital communication. Sources were identified through searches of academic databases and online repositories, including Google Scholar, Scopus, Web of Science, African Journals Online (AJOL), ScienceDirect, ResearchGate, institutional repositories and government and development-agency websites

FINDINGS

Balkrishna and Deshmukh (2017) investigated the Role of social media in Agriculture Marketing and its Scope, arguing that social media is an emerging tool for agricultural marketing. The study adopted a descriptive research method, and the primary data collection tools used were the structured questionnaire and in-depth interviews with farmers who use social media. The analysis found that social media is a very useful tool in agricultural marketing. It saves farmers time and cost in obtaining information. Facebook is the most common social media platform for pages and profiles. YouTube videos are the most popular for obtaining information, along with applications. WhatsApp is the handy social media platform and is mostly preferred for sharing information among group members. Many officials have their official pages, blogs, and groups on social media, which helps in obtaining information and solving problems. Challenges arise

in the adoption of social media as a marketing tool, as people trust e-buying and e-selling of agricultural commodities on social media less.

Similarly, Takahashi et al. (2025) investigated the use of social media for agricultural information dissemination. This study uses a randomised experiment targeting wheat producers in Ethiopia to examine the impact of providing market price information through Facebook on farmers' sales behaviour. Findings reveal that when wheat selling prices were provided immediately after the harvest when prices are typically at their lowest only the information provided by Ethiopian informants led to a reduction in sales decisions and sales volume during that period. The study suggests that farmers used the price information to delay sales until prices were higher, rather than negotiating with traders during the low-price period. These findings demonstrate the potential of social media for efficiently disseminating price information and highlight the importance of informant homogeneity in the effectiveness of such interventions.

In addition, Kanjina (2021) examined Farmers' Use of social media and Its Implications for Agricultural Extension: Evidence from Thailand. This study therefore surveyed social media use by farmers in developing countries, and their role as a source of agricultural information. 365 farmers in Chiang Mai, Thailand, were sampled and interviewed using a structured questionnaire. The findings revealed that the majority of respondents (81.92%) did not adopt social media and, these remained marginal as a source of agricultural information for farmers. Those using social media (18.08%) employed certain applications, i.e., Line, Facebook and YouTube, mainly for communication, new updates and entertainment. Younger farmers and farmers with a higher formal education related to social media use significantly. The study recommended that to fully harness the potentials of social media for agricultural extension, more farmers need to be encouraged to use them, while relevant agencies also are required to provide support for this effort, such as staff training in social media use, and enabling a social media policy.

Also, Gwelo (2025) focused on Social Media Apps and the Democratisation of Agricultural Knowledge The study investigated the role of social media applications in democratising agricultural knowledge among smallholder farmers in South Africa. it adopted a multiple case study methodology; the research draws on interviews with a sample of 21 smallholder farmers and an analysis of Facebook and WhatsApp groups dedicated to agricultural exchange. Grounded in the Critical Theory of Technology and Knowledge Systems Theory, this study reveals how mobile apps challenge traditional knowledge hierarchies, empowering smallholder farmers to actively participate in the creation, dissemination, and access of agricultural knowledge. This study's findings demonstrate that these digital platforms facilitate smallholder farmers' active participation in knowledge processes, such as knowledge creation, dissemination, and access, bridging the knowledge gap that has long characterised smallholder agriculture. Thus, this study calls for policy and practice to rethink agricultural knowledge systems that prioritise centralised and top-down extension models and instead leverage mobile apps for fostering environments where peer-to-peer knowledge exchange is legitimised, supported, and integrated into formal agricultural strategies.

In a similar development, Adejo, and Opeyemi.[1] (2019) Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria. Primary data was used for the study collected with the aid of structured questionnaires. The study employed a multi-staged random sampling technique to collect a total of One hundred and twenty respondents for the study. The result further revealed that facebook (71.7%) and whatsapp (53.3%) were the major types of social media use by the farmers in the study area. The result indicated that high level of illiteracy, lack of technical know-how, financial difficulties/charges, among others were the major constraints facing the use of social media by the respondents as a means of sourcing agricultural information in the study area. The study recommended that government should provide infrastructures and social amenities in rural areas to encourage participation in agricultural activities in the rural areas.

Similarly, Nwaizugbo and Abereola (2021) focused their study on the Use of social media in the Marketing of Agricultural Products and Efficiency in the Cost of advertising agricultural products in South-West Nigeria. the study employed a survey research design to elicit data from respondent from six south-western states in Nigeria. The study sought to determine the extent to which the usage and adoption of social media in the marketing of agricultural products can enhance efficiency in the cost of marketing agricultural products. Data revealed that the use of social media (WhatsApp and Twitter) in marketing of agricultural products significantly enhances efficiency in the cost of advertising agricultural products through significant reduction in the cost of marketing agricultural products. The social implication is that increased participation of youths in agriculture as a result of the considerable reduction in the cost of marketing agricultural products

due to the use of social media in the marketing of agricultural products, will significantly reduce social vices in society.

In corresponding research, Moruppa and Ijabula (2021) investigated the Use of social media as A Source of Agricultural Information by Farmers in Mubi South Local Government Area of Adamawa State, Nigeria. Data for the study were collected through a well-structured questionnaire and analysed with descriptive statistics and standard deviation. The study revealed majority (43.8%) of respondents use Facebook as their main social media platform when looking for agricultural information and they often source information on agrochemicals, improved crop, and Pest and disease control using those medium. The research therefore recommended that adequate information available and accessible to farmers on social media' to enhance effective participation in agriculture, especially rural farmers who might find it difficult to have access to the latest trends in agricultural innovation and also agricultural information (programmes) should be broadcasted in local languages as much as possible and efforts must be taken in to consideration to guarantee that the airing times are suitable.

THEMATIC SYNTHESIS AND DISCUSSION

The reviewed literature suggests that social media expands the speed and geographical reach of agricultural communication. WhatsApp, Facebook and YouTube allow institutions, extension workers and farmers to circulate text, voice, photographs and videos without requiring every interaction to occur through a physical visit. This advantage is particularly relevant where extension personnel are insufficient, or farmers are widely dispersed. However, digital reach should not be equated with actual access, comprehension or adoption because connectivity, device ownership, data costs and digital literacy remain uneven.

The findings indicate that social media is most valuable when it complements existing agricultural extension systems. It is not a substitute for field demonstrations, farm visits, laboratory diagnosis, input inspection or physical accountability mechanisms. Many agricultural questions are location-specific and require direct observation. Digital communication can identify and prioritise such problems, but extension personnel may still need to visit farms or conduct practical demonstrations. An integrated communication system that combines social media with radio, farmer field schools, community meetings and farm visits is likely to be more effective than reliance on any single channel.

The literature also indicates that Misinformation is a critical threat. Social media's speed and openness support information sharing but also facilitate the circulation of inaccurate agricultural advice. The solution is not to reject digital communication; it is to strengthen verification, media literacy, institutional responsiveness and relationships with trusted agricultural communicators. Reliable digital platforms should combine expert validation with participatory feedback.

Finally, social media can increase awareness of agricultural innovations, but awareness alone does not guarantee adoption. Adoption is influenced by the cost of the innovation, compatibility with local conditions, perceived benefits, availability of inputs, trust in the source and evidence from other farmers. Social Learning Theory helps explain why demonstrations, testimonials and peer examples may be more persuasive than written instructions alone. Video demonstrations and photographs of field results shared through WhatsApp and Facebook can serve as observable models that influence farmers' decisions.

CONCLUSION

Social media has become an important instrument for promoting information on agricultural programmes and innovations among stakeholders in North-Central Nigeria. Its major strengths include broad reach, rapid dissemination, relatively low communication cost, multimedia presentation, continuous interaction, peer learning, market networking and feedback to agricultural institutions. Platforms such as WhatsApp, Facebook and YouTube are particularly relevant because they can support communication among farmers, extension personnel, government agencies, researchers and agribusiness actors. Evidence from Nigerian studies indicates that social media can reduce some limitations of conventional extension and improve awareness of agricultural information and programmes. The review nevertheless concludes that social media should not be treated as a technological solution to all agricultural communication problems. Its outcomes depend on infrastructure, affordability, digital competence, information credibility, language, cultural relevance, institutional coordination and the availability of resources for implementing recommendations. Social media should complement rather than replace face-to-face extension, radio, farmer field schools and practical demonstrations.

RECOMMENDATIONS

1. Extension workers should prioritise WhatsApp, Facebook and audio-visual communication in line with audience preferences and communication objectives. Short videos, voice notes, photographs, infographics and live question-and-answer sessions should be used alongside written messages.
2. Digital communication should complement rather than replace conventional extension. Radio, farmer field schools, community meetings, demonstration plots and farm visits should remain part of an integrated communication system.
3. Farmers, youths, women's groups, extension agents and programme administrators should receive training in platform use, online safety, source verification, agricultural information search and responsible content sharing. Digital literacy programmes should target older farmers and women, who are often underrepresented in digital spaces.
4. Government and telecom providers should prioritise expanding reliable internet infrastructure to rural farming communities, provide affordable smartphones and subsidised data plans for farmers through partnerships with telecom companies, agricultural banks, or development organisations.
5. Agricultural information should be translated into relevant Nigerian languages and adapted to local crops, farming systems, climate conditions, cultural practices and resource constraints. Content should reflect the realities of smallholder farmers in North-Central Nigeria.

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